Volume 89 Number 5

STEEL

For forty-eight years—IRON TRADE REVIEW

PRODUCTION ◆ PROCESSING ◆ DISTRIBUTION ◆ USE

This Week in Steel

ACTING after the stock market closed on Tuesday, directors of U. S. Steel reduced its dividend rate on common stock to $4 per share and recommended adjustment of salaries of officers and other employes. These decisions, arrived at in spite of its large reserves and in the face of its previously reiterated firm stand on wages, reflects the anxiety over profits. The directors' action (Page 15) will have a sobering effect on business, especially when it is considered with quarterly statements (Pages 15 and 16) of Youngstown Sheet & Tube, Republic, Jones & Laughlin and other independents. . . . Washington reports President Hoover gratified over assurances he is said to have received the Steel corporation contemplates no immediate action on wages, and after a cabinet meeting an official statement was issued Tuesday that the President has not altered his policy opposed to reductions (Page 15).

Operating Rate Climbs Back To 32

With meager profits or deficits, reduced dividend rates, and lower wages in prospect, emphasized by second quarter reports, steelmakers instinctively turn to the future for news of more encouraging import. Unfortunately there is nothing on the horizon warranting high hopes for August other than the seasonal improvement which usually accompanies the fall months. An upturn of 2 per cent in steelworks operations (Page 69) indicates that the industry had reduced its activities to the rock bottom of demand. The gain from 30 to 32 per cent, while gratifying, probably is sporadic.

Steel Production Spreads in Last Decade

Contrary to the widespread belief that the steel industry is gradually drifting westward, statistics show than in the past decade production of steel was distributed over a wider area, but no marked trend toward any single locality was apparent (Page 26). The surprising fact revealed by the figures is that the output of Illinois and Indiana has remained constant in its ratio to the total for the country. Pennsylvania lost ground appreciably and Ohio slipped slightly. . . . Output of steel castings in the United States and Canada, 1,183,599 net tons in 1930, was down 31 per cent, from 1,729,791 tons in 1929 (Page 20).

Steel Loses Round To Copper

Protection of home industries, once a political battle cry, has become a business reality and Canada adds to her list of steel and iron imports on which higher duties (Page 16) must be paid. . . . To assist its copper industry, hav-

Photo, Crane Service News

Using a 4400-pound skullcracker, the crane scored a knockdown with every swing, wrecking a 3-story warehouse at Vincennes, Ind. The crane's winches furnished power to pull it up a steep ramp

Acme Photo

If the steel in this memorial bridge, between New York and New Jersey, named for George Washington, had been available then, the revolutionary war might have been shortened considerably

ing no steel production, Arizona elects to have its 1932 automobile license plates made of copper, a native product (Page 59). This indicates the competition steel meets in its most intrenched positions. . . . While steel and iron scrap dealers, organized for mutual good in the Institute of Scrap Iron and Steel Inc., settle their own business disputes by compulsory arbitration, (Page 60) they also seek to take a hand in settling the freight rate question and ask (Page 19) an opportunity to tell the effects of a rate increase on their business. . . . That greatness passes with time is trite and is exemplified in the sale (Page 60) of the former presidential yacht MAYFLOWER for scrap at a fraction of its original cost.

More Jobs for Electric Eye in Industry

New uses for photoelectric tube relays or electric eyes, as they are called, come to light with unceasing regularity. A builder of monorail conveyors now propcses to equip a new railroad terminal with special facilities for rapid handling and distribution of mail into cars, embodying trains of monorail carriers with trays which are dumped by the action of a photoelectric tube relay mounted on the carrier (Page 31). Conservation of manual labor and space are accomplished by the system, which should suggest similar applications of the electric eye in industry.

Long life, minimum maintenance expense, moderate cost, simple assembly and high salvage value are claimed for a new type of cast-iron roof for industrial buildings, recently developed by an eastern foundry. The roof comprises standard plates held together by narrow cap plates which in turn are keyed to roof purlins through lugs cast on the inner surface of the cap plates (Page 38). Weight is 10.8 pounds per square foot.

Exports of Construction Equipment Gain

Exports of American construction machinery continue to expand—as foreign governments intensify efforts for unemployment relief. Shipments in 1930 were 2 per cent larger than in 1929. Canada leads the list; Chile pushes Russia out of second place, but nevertheless Russia increases its purchases. Greece becomes fourth on the list (Page 17). . . . Iron and steel exports declined to 75,585 tons in June, down 15,822 tons from 91,407 tons in May (Page 21). Chief losses were in scrap, tin plate, rails. June imports gained 643 tons, to 37,819 tons. Motor vehicle registration in the United States Jan. 1 totaled 26,697,398, nearly three-fourths of the world total of 35,805,632 (Page 17).

Oriental Labor Solved the Problem

The problem of waste disposal often assumes sizable proportions. A certain wire mill (Page 42) was confronted with the question of what to do with quantities of nails, tacks, etc., in mixed sizes, accumulated from floor sweepings in the mail department. Lady Luck smiled in this instance and a chance Japanese visitor purchased the accumulation, shipping it to the Orient for sorting and selling to the retail trade.

I. C. C. Seeks Short Cuts in Rate Case

The interstate commerce commission speeds action in the freight rate case, directing opponents to appear Aug. 10, instead of Aug. 31, and telling them to cut oral testimony short, and to use more exhibits (Page 19). . . . July output of passenger cars and trucks is estimated at 200,000 units, 50,000 less than in June. August is expected to end the five-month consecutive decline in production, with an output below January's 171,400. Ford closes its manufacturing plant at Dearborn, Mich., July 29, for the month of August (Page 25). Studebaker and Dodge are embarking on retooling operations.

Corporation Cuts Dividends But Not Wage Rates

NEW YORK—Directors of the United States Steel Corp. Tuesday cut the dividend rate on the corporation's common stock, but contrary to reports of their anticipated action they did not reduce wage rates.

The official announcement following the meeting contained this statement: "Directors recommended that an adjustment of salaries of all officers and other salaried employes be made in varying percentages, depending upon the character of service rendered."

Previous reports had it that a majority of the directors favored a reduction in wages. Washington dispatches state that positive assurances were given this week to President Hoover that the corporation does not contemplate any immediate action in regard to wages.

The corporation's common stock is now on a $4 yearly basis, with the declaration of a quarterly dividend of $1 a share. This rate is a reduction from the $7 annual rate in effect since 1926. It is the first cut in the regular dividend since 1915. The regular quarterly dividend of $1.75 on the preferred stock was declared.

For the second quarter total earnings were $13,817,524, which less depreciation of $12,211,569, left net income of $1,605,955. After bond interest, balance was reported of $230,389 to which was added $7,160,966 in special income, a large part of which presumably was derived from the sale of a public utility subsidiary at Gary, Ind., recently.

Total income, therefore, was $7,391,355. After preferred and common dividends aggregating $15,009,217, a deficit of $7,617,856 was incurred.

June quarter net income was equivalent to 12 cents a share on 8,701,371 shares of common stock, against 5 cents a share for first quarter.

President Denies Wage Policy Has Been Changed

Washington—Following a meeting of President Hoover with members of his cabinet Tuesday, this statement was issued:

"No member of the administration has expressed the view or holds the view that the policy of the administration advocating maintenance of wages should be changed. It has not been changed."

The statement was said to have been called for by the fact a wrong impression prevailed from publication of a letter written by Secretary of Commerce Lamont to Representative Francis B. Condon, Rhode Island, in reply to a protest from Condon against wage reductions he said were made in Rhode Island. Mr. Lamont wrote that the position of President Hoover was "well known and understood," and then added that there might be exceptions where a company would be forced to reduce wages or cease operating.

J. & L. Incurs Deficit

Jones & Laughlin Steel Corp., Pittsburgh, reports net income after charges of $391,823, in the second quarter against a deficit of $190,982 in the first quarter. Six months net was $200,841, against $6,958,696 first half of 1930. After the preferred and common dividends deficit for the first half of 1931 was $2,718,625, compared with a surplus of $3,462,910 for the corresponding time of 1930.

General Electric Net Down

General Electric Co.'s orders received for the first six months of 1931 amounted to $141,428,978, compared with $190,313,758 for the corresponding period last year.

Profit available for dividends on common stock for the first six months of 1931 was $21,523,722.88, compared with $29,273,276.14 for the first six months last year. The profit available for common stock for the six months is equivalent to 75 cents

Steel Corporation's Quarterly Report Summarized

	Second quarter 1931	First quarter 1931	Second quarter 1930
Total earnings	$13,817,524	$19,464,836	$47,061,304
Less depreciation, depletion, etc	12,211,569	11,325,302	15,921,493
Net income	1,605,955	8,139,534	31,139,811
Less bond interest	1,375,566	1,374,477	1,409,730
Balance	230,389	6,765,057	29,730,081
Add special income*	7,160,966	.....	2,396,636
Total	7,391,355	6,765,057	32,126,717
Dividends			
Preferred	6,304,919	6,304,919	6,304,919
Common	8,704,292	15,223,378	14,981,533
Surplus	†7,617,856	†14,763,240	10,840,265

*Quarterly apportionment of net interest on Federal tax refunds.
†Deficit.

Monthly Earnings of United States Steel Corp.

	1931	1930	1929
January	$6,118,411	$15,404,359	$18,759,098
February	6,155,548	16,107,410	19,080,941
March	7,190,877	18,103,628	22,265,342
First quarter	19,464,836	49,615,397	60,105,381
April	5,135,499	16,113,583	22,361,428
May	4,182,732	16,570,790	25,604,641
June	4,499,293	14,376,931	24,029,392
Second quarter	13,817,524	47,061,304	71,995,461
First Half	33,282,360	96,676,701	132,100,842
July	.....	13,479,870	24,303,058
August	.....	13,000,496	24,687,088
September	.....	11,514,933	21,183,566
Third quarter	.....	37,995,299	70,173,713
Nine months	.....	134,672,000	202,274,555
October	.....	10,943,449	22,066,325
November	.....	7,949,384	18,367,105
December	.....	4,190,958	16,014,467
Fourth quarter	.....	23,083,791	56,447,897
Year	.....	$157,755,791	$258,722,453

per share in 1931 and $1.01 per share in 1930.

Stockholders to whom the July dividend is to be distributed total 133,163, compared with 116,750 at the end of 1930 and with 88,408 a year ago, an increase of 50 per cent over a year ago.

Sheet & Tube Net Down

Youngstown Sheet & Tube Co., Youngstown, O., reports for the quarter ended June 30 net loss of $1,176,444 after deducting interest, depreciation and other charges, equal after preferred dividends to a loss of $1.15 a share on 1,200,000 common shares.

This compares with a net loss in the preceding quarter of $822,909 or 86 cents a share on the same number of shares of common, and a net profit, in the second quarter of 1930, of $2,810,345 or $2.17 a share on common.

Republic Reports Loss

Republic Steel Corp., Youngstown, O., reports loss from operations for the second quarter of $1,017,304 which plus guaranteed preferred dividends resulted in net loss of $1,092,304. Operating profit of $899,637 was shown, but less depreciation of $1,916,942, the loss was incurred. Loss in the first quarter of 1931 was $1,692,593.

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Continental Steel Corp., Kokomo, Ind., and subsidiaries report for the half year net loss of $106,533, after taxes and other charges. For the first six months of 1930 net profit of $179,133 was reported.

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Virginia Iron, Coal and Coke Co., Roanoke, Va., reports for the quarter ended June 30 net profit of $26,828, compared with net loss of $68,766 in the corresponding period of 1930.

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A. M. Byers Co., Pittsburgh, and subsidiaries net for three months ended June 30 was $3,766 compared with $242,469 in the corresponding period of 1930. Consolidated net profit for nine months totaled $106,999 compared with $913,817 for corresponding period one year before.

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Newton Steel Co., Youngstown, O., reports net profit of $71,911 before depreciation and interest charges for the first half. After deducting $90,000 interest on notes and depreciation of $180,000, net loss was $198,088. Net loss for the second quarter amounted to $130,144; first quarter, $67,943, both after interest and depreciation.

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Colorado Fuel & Iron Co., Pueblo, Colo., reports deficit of $389,061 for the second quarter before deduction for equipment not retired and federal taxes. Half-year deficit before like charges is $636,276, compared with net profit before deduction for equipment retired of $1,619,053 in the first six months of 1930.

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McKeesport Tin Plate Co., McKeesport, Pa., for the first half had net profit of $1,270,722, equal to $4.23 a share on the common, compared with $1,513,850, or $5.04 a share, in the like period of 1930.

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Interlake Iron Corp., Chicago, for the second 1931 quarter reports net loss of $264,762 after all charges, including $281,643 depreciation, in comparison with a net income of $69,455, equal to 3 cents a share, in the preceding quarter. Net loss for the first half of 1931 was $195,307, against net of $1,297,538, or 65 cents a share, in the corresponding 1930 period.

Canadian Tariff Amended To Increase Duties on Tubes and Tin Mill Sheets

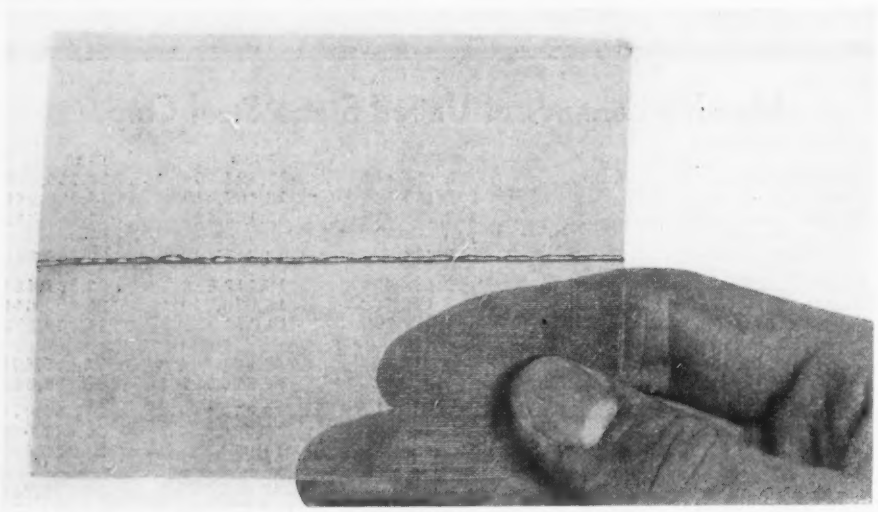
WASHINGTON — Telegraphic advices received by the department of commerce from assistant commercial attache Oliver B. North at Ottawa state that increased duties on some 20 or 30 tariff items have been put into effect by the Canadian government pending final approval by parliament.

Sheets of iron or steel, cold-rolled, when imported by manufacturers for use exclusively in the manufacture of sheets coated with tin, are to be admitted free of duty until Sept. 1, when the rates of 10 per cent general, 7½ per cent intermediate, and 5 per cent preferential will become effective.

Seamless iron or steel tubing for use in well drilling is required to be over 8 inches in diameter to be admitted free of duty, instead of 4 inches, as formerly.

Other articles on which tariff changes are proposed include electric refrigerators, increased from 30 to 40 per cent, electric dental engines from 20 to 35 per cent, street and road rollers 20 to 30 per cent, metal parts for covered buttons 20 to 30 per cent and lignite coal from 40 to 75 cents per ton.

Increase in the diameter of steel tubing admitted free is in line with the policy of the Dominion to place a duty on materials produced at home and admit free those not available from domestic makers. The change in size of tubes doubtless is to protect newly equipped mills now able to produce tubes up to 8 inches.



FINE METAL GAUZE WELDED BY ATOMIC HYDROGEN METHOD
An interesting example of the nicety with which fine materials can be welded by the atomic hydrogen method—the sample is 80-mesh screen gauze of 36-gage monel metal, welded in the Chicago service shop of the General Electric Co. The weld, of the edge type, was made by clamping the two pieces of gauze between two pieces of steel, allowing the edges to protrude. A 21-ampere current was used with 1/16-inch diameter tungsten electrodes. Speedy work was necessary to prevent burning the wire

The Business Week In Washington

AGAIN of 70,000 gross tons in the United States total was the outstanding exception to a general decline in the volume of merchant ships under construction in the principal ship-

building countries of the world during the second quarter of the current year, as compared with the first quarter, according to the department of commerce.

The department announces that American shipbuilding during the second quarter of this year rose to a new high record for postwar construction, and, with the exception of wartime, the highest in history.

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Freight traffic handled by the class I railroads in May amounted to 30,014,344,000 net ton miles, according to the bureau of railway economics.

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Motor vehicle registration as of Jan. 1 in the United States totaled 26,697,398, nearly three-fourths of the world registration of 35,805,632 vehicles, according to the world census of the department of commerce.

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Interstate commerce commission has announced that it will resume 15 per cent freight rate increase hearings, Aug. 10, when opponents of the increase will be heard.

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Patrick J. Hurley, secretary of war, has approved the recommendations of the board of advisors of the Inland Waterways Corp. against the proposed barge line operations through the Hennepin canal connecting the Mississippi and Illinois rivers.

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Industrial production showed more than the usual seasonal decline in June, and factory employment and payrolls decreased, according to the monthly summary of the federal reserve board. Wholesale prices, which had continued to decline until the end of May, advanced in June, but for most commodities declined again in July.

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Announcement has been made that Henry P. Fletcher, chairman of the United States tariff commission, will resign about the middle of September. Mr. Fletcher states that when he accepted the post he had an understanding with the President that he would not remain on the commission for more than a year. Mr. Fletcher states that with one exception all of the requests made by the last session of congress will have been completed before he resigns.

Newton Moves Offices to Detroit and Monroe

Youngstown, O.—The following official statement has been issued here by the Newton Steel Co.:

"We wish to advise that by Sept. 1, 1931, the executive and general sales offices of the Newton Steel Co. will be established in Detroit, and the general office of the Newton Steel Co. will be located at Monroe, Mich., after being removed from Youngstown, O."

World Unemployment Relief Spurs Equipment Demand

WASHINGTON — Expanded construction programs undertaken by foreign governments as measures of unemployment relief were reflected in an increased demand abroad for American construction machinery during the past year, according to the commerce department's industrial machinery division.

Exports of this type of machinery from the United States during 1930 continued on the upward trend which has been in evidence since 1925. The total shipped last year was valued at $16,757,000, compared with $16,370,000 in 1929. From 1925 through 1929 the expansion was at the rate of approximately $2,000,000 per year.

As in previous years Canada was the most important buyer during 1930, its purchases amounting to $4,710,000, a slight increase over the total of $4,690,000 in 1929.

The outstanding development during 1930, however, was the remarkable increase in shipments of construction machinery and equipment to Chile, which amounted to $2,115,000, or two and one-half times greater than the total of the previous year. As a result, Chile replaced Russia as the second most important outlet. The large gain in this instance was made possible by heavy expenditures on the part of the Chilean government on road construction work, public buildings, water supply and sewage projects, irrigation works, and railroads.

Although dropping to third place in the list, Soviet Russia boosted its purchases from $1,180,000 in 1929 to $1,500,000 in 1930. Another striking feature was the improved position of Greece as a market. Purchasing equipment valued at $1,400,000 as compared with a total of $283,000 in the previous year, that country ranked fourth in the above list.

Dividend Rights Restored To Sheet & Tube Dissenters

Youngstown, O.—Under an amendment to the Ohio corporation code which became effective July 23, holders of common stock of the Youngstown Sheet & Tube Co., who dissented to the proposed merger with the Bethlehem Steel Corp., will again share in the company's dividends. They lost their dividend and voting rights when they opposed the merger; the amendment does not restore voting rights.

Dividends withheld amounted to $1,732,500, and the courts may be asked to determine whether the stockholders are to receive this money. Sheet & Tube in 1930 placed $1,250,000 in a special fund to meet the dividend payments, when, and if, ordered.

Photo, Courtesy Columbian Steel Tank Co.

When two ultra-moderns get together: The first autogiro to land at the Kansas City, Mo., airport is shown here taking gasoline from the latest type of airplane refueler. Trucks for carrying "gas" have been improved in appearance by enclosing the sides with compartments. It was a great forward stride in automobile manufacture when builders introduced "enclosed body" types; now, it seems, some truck manufacturers see the possibilities in better designs

Structural Steel's Fair Practice Rules Approved

WASHINGTON—Trade practice rules for the structural steel fabricating industry have been approved by the federal trade commission, substantially as formulated and adopted by the fabricators at a conference in Biloxi, Miss., Nov. 11, 1929. The conference was attended by commissioner William E. Humphrey and representatives of 45 firms in addition to the membership of the American Institute of Steel Construction.

On the basis of tonnage about 70 per cent of the structural steel fabricating industry was represented. The rules were submitted to the trade commission, and only minor changes were made before approval.

Unfair Practices Are Defined

The first group of ten rules defines as unfair such practices as:

Using or substituting in structures materials inferior in quality to those specified by the purchasers, without the consent of the purchasers.

Using methods of manufacture and erection not in accord with the applicable governmental laws, rules and regulations obtaining in the territory affected.

Selling goods below cost with the intent and with the effect of injuring a competitor and where the effect may be to substantially lessen competition or tend to create a monopoly.

Secret payments or rebates, refunds, commissions, or unearned discounts, or the secret extension of special services or privileges, not extended to all purchasers under like terms and conditions, with the intent and with the effect of injuring a competitor.

Defaming competitors by falsely imputing to them dishonorable conduct, inability to perform contracts, questionable credit standing, or the false disparagement of the quality of their goods.

Maliciously inducing or attempting to induce the breach of existing contracts between competitors and their customers by false or deceptive means.

Discriminating in price between different purchasers of commodities, where the effect of such discrimination may be substantially to lessen competition or tend to create a monopoly in any line of commerce.

The second group of rules approves the establishment of minimum standards of structural design; a standard form of contract which will protect rights of buyers and sellers, and creates a committee of fabricators to co-operate with the trade commission to put the rules into effect.

Cables 3 Feet in Diameter, Mile and a Half Long for Golden Gate Bridge

MORE than 174,000 miles of wire, enough to girdle the earth seven times at the equator, will be used to spin the two 10,937-ton main cables and suspender ropes that will swing the world's longest suspension bridge across the Golden Gate at San Francisco. This bridge will require a total of 106,000 tons of steel in its construction. Contracts for some of the largest tonnages have been delayed due to legal technicalities in the issuance of bonds.

The task of assembling the cables, each of which will weigh more than Germany's new "all welded" battle cruiser DEUTSCHLAND,* from the bridge's 744-foot towers has been assigned by contract to the American Cable Co., New York, an associate of the American Chain Co., Bridgeport, Conn.

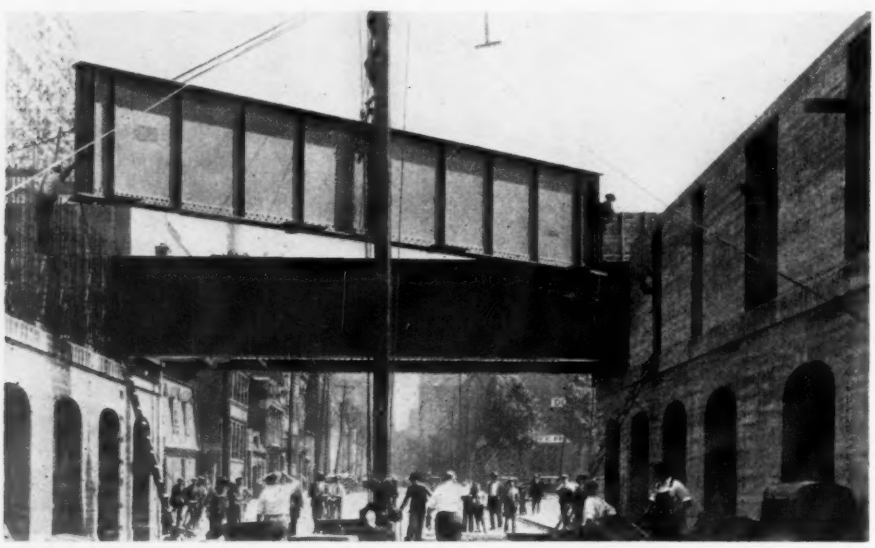
Some idea of the proportions of the job may be envisioned in the fact that the towers are comparable to the height of the Woolworth building and that the work of assembly must be carried out on an aerial footbridge swung from their tops.

Construction of the bridge, costing $33,000,000, is scheduled to start shortly and take four years. It will be 9200 feet long, including a 4200-foot main span, two 1100-foot end spans and two 1400-foot approaches. It will have a 60-foot roadway 90 feet wide between cable centers. It will cross the stormy narrows of San Francisco bay and connect that city with Marin county and Redwood county.

Two remarkable engineering accomplishments will be involved in the construction. One will be the cable erection, costing $6,265,767. The other will be the sinking of the piers to support the towers in solid rock beneath the swiftly running tides of the bay in such a manner that earth tremors will not affect them.

Each of the main cables will be continuously about a mile and one-half long when completed and 36¼ inches thick. Each will contain 27,577 wires, each wire being cold drawn to stand a pull of 7600 pounds. When the cables are finished they will stand a pull of 209,550,000 pounds. The wires used will be about 1/5-inch diameter.

When "spun" the cables will be 4 feet in diameter. A machine will be used to "squeeze" or compact each cable to its required 36¼ inches diameter.



Structural steel plays an important part in the Canadian National railway's $50,000,000 terminal now under construction in Montreal. Streets are being spanned with steel girders weighing 17 tons each

Rate Case Is Speeded; Opponents' Hearing Aug. 10

WASHINGTON—The interstate commerce commission is showing evidence of a desire to reach an early decision in the application of the railroads for a 15 per cent increase in freight rates. The commission has ordered opponents of the petition to appear before it Aug. 10 in Washington instead of Aug. 31 as previously arranged. Hearings will be held in various parts of the country.

The commission also has announced the following hearings before examiners: Portland, Me., Aug. 4; Portland, Oreg., Aug. 12; San Francisco, Aug. 17; Atlanta, Ga., Aug. 17; Dallas, Tex., Aug. 21; Salt Lake City, Utah, Aug. 24; Kansas City, Mo., Aug. 26; and Chicago, Aug. 31.

It is expected the eastern opponents, except those in New England, will present their evidence at the Washington hearing. Printed briefs, the commission states, must be filed within ten days after the close of the final hearing.

The commission has announced that "the requests for time which have already been received exceed practical limits. Evidence must be presented as concisely as possible, using exhibits to curtail oral testimony." Evidence will not be received regarding the situation of individual railroads or minor groups of railroads and the level of railroad wages.

Oral argument will be held before the commission in this city about ten days after the close of the hearings.

Chicago Steelmakers Not Inclined To Oppose

Chicago—Just what opposition to the proposed rate increase will develop at the hearing before the interstate commerce commission examiners at Hotel Sherman, Chicago, Aug. 31, is not clear at this time. Steel producers in the Chicago district are not as a group opposing the movement for higher rates.

The disposition not to oppose the rates exists despite the fact that probably $2 will be added to the assembly costs of materials per ton of steel, and $1 per ton of pig iron. Thus far, iron and steel interests have made no plans for intervention in the Chicago hearing. It is intimated that formidable opposition to the rate advance might change the attitude of those interested in raw material and finished steel rates. Therefore, developments will be watched as the time for the Chicago hearing approaches. The Chicago Association of Commerce thus far is the only group to favor the rate advances as a public policy. The Illinois Manufacturers' association has withheld final decision.

Scrap Institute To Plead In Freight Rate Hearing

New York—Institute of Scrap Iron and Steel Inc., New York, Benjamin Schwartz director general, has filed an appearance with the interstate commerce commission to be heard on the petition of railroads for a 15 per cent increase in freight rates. The brief to be presented by Mr. Schwartz will be based on a canvass now being conducted by members of the national board and the traffic committee of the institute.

The steel and iron scrap industry estimates it pays $30,000,000 annually in freight charges and a 15 per cent increase would mean $4,500,000 additional.

Grace Sees Slow Recovery; Southern Plant Denied

Bumping on the bottom of the depression with a seasonal pickup due in the fall but no sign of an immediate upward trend is the picture of the present situation in steel and iron in the mind of Eugene G. Grace, president of Bethlehem Steel Corp., as expressed recently. With July operations of his company at about 33 per cent of capacity and August expected to show no better rate Mr. Grace sees no immediate increase in volume of business.

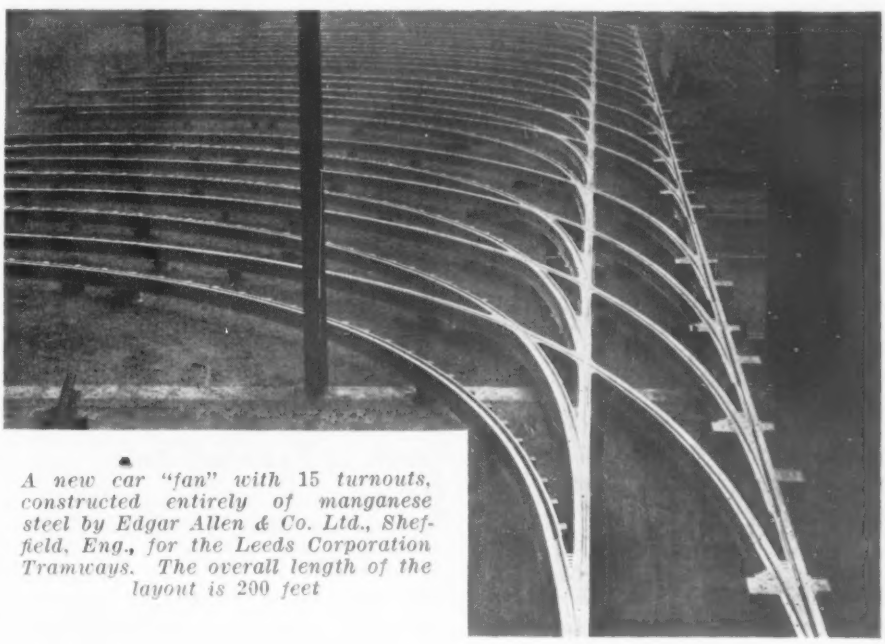
He pointed out that in previous depressions some part of the world was not affected, while in the present situation the entire world is affected at the same time and to about the same degree. For that reason recovery is more difficult than usual and probably will be a protracted process.

Denial is made by Bethlehem Steel Corp. of reports current that the company is negotiating for a southern iron or steel company, in the Birmingham, Ala., district. Woodward Iron Co. has been mentioned in this connection and the report suggested that Bethlehem might take over the stock interests of Eaton-Otis in the Gulf States Steel Co.

Two Bosshardt Furnaces Go Into Operation in Canton

New York—The first plant in the United States for producing direct castings of steel by the Bosshardt open-hearth process, used in Germany for ten years, started operations last week in Canton, O., it was announced by the International Steel Corp., 347 Madison avenue, New York, owner of American rights to the process.

The Canton plant is operated by the Bosshardt Steel Corp. of Ohio, which holds a license to the process. Two of ten furnaces, each of 3½ tons capacity, began operations, according to the announcement. A number of invited guests, interested in the process, were present when the furnaces started.



A new car "fan" with 15 turnouts, constructed entirely of manganese steel by Edgar Allen & Co. Ltd., Sheffield, Eng., for the Leeds Corporation Tramways. The overall length of the layout is 200 feet

Carbon Steel Castings Increase Lead in 1930

ALLOY steel castings lost ground in 1930, as regards to their proportion of the total output of steel castings made in the United States and Canada, while the proportion of carbon steel castings increased. These are features of compilations made by the Steel Founders' Society of America Inc., New York. Total output in 1930 was 1,183,599 net tons, a reduction of 31 per cent from 1,729,791 tons made in 1929.

Carbon steel castings amounting to 1,063,062 tons constituted 89.9 per cent of all steel castings produced. The comparative figures for 1929 were 1,483,249 tons, and 85.7 per cent. Under this classification, open-hearth steel accounted for 64.4 per cent of the grand total; electric, 24.1 per cent; converter, 1.4 per cent; and crucible, less than 0.1 per cent.

Output of alloy steel castings in 1930 totaled 120,537 tons, scarcely more than half the 232,692 tons made in 1929. The proportion of alloy steel castings to the entire output dropped from 13.5 per cent in 1929 to 10.1 per cent in 1930. Under this division, open-hearth steel accounted for 3.4 per cent of the total output of steel castings; electric, 6.2 per cent; converter, 0.5 per cent; and crucible, a negligible amount.

Open-hearth steel made up 67.8 per cent of all steel castings produced last year; electric, 31.3 per cent; converter, 1.9 per cent, and crucible, less than 0.1 per cent.

Total capacity for 1930, 2,432,270 tons, represented a decrease of approximately 100,000 tons, equivalent to a reduction of about 4 per cent, partially due, it is explained, to the fact that heat-corrosion resisting alloy foundry capacity was separated from the steel foundry totals. The output of heat-resisting alloy steel castings has not yet been announced.

The average number of employes in the industry in 1930 was 67,033, and in 1929, 63,032. The statistics for 1930 represent all but 12 steel foundries in the United States and Canada. In 1929 all but 11 were included in the compilation.

June's Plate Orders at Low for Five Years

New orders for fabricated steel plate were at the lowest since February of 1924 when in June of 1931 a total of 22,806 tons were reported placed. Though a gain was recorded in material for oil storage tanks, other classifications showed declines, as the department of commerce tabulations reveal:

In Tons

1930	Total	Oil storage tanks	Blast furnaces	Miscellaneous
June	41,774	9,869	511	20,698
6 mo.	263,438	58,912	8,446	110,018
July	38,283	11,969	102	17,752
Aug.	36,513	10,056	750	21,910
Sept.	41,066	14,916	514	18,301
Oct.	30,197	4,518	231	18,665
Nov.	33,151	9,965	179	14,632
Dec.	26,787	5,118	135	13,227
Year	469,435	115,454	10,357	214,505
1931				
Jan.	27,518	2,598	111	20,845
Feb.	24,438	3,585	75	16,245
Mar.	31,056	2,538	833	21,697
April	29,916	7,749	25	17,783
May*	26,210	2,411	230	20,370
June	22,806	4,679	356	15,817
6 mo.	161,944	23,560	1,630	112,757

*Revised.

Trucks, Tractors Bolstered By Foreign Shipments

Due to specifications from foreign sources, shipment of electrical industrial trucks and tractors turned upward in June. Domestic shipment was off from the May figure. Half-year aggregates show domestic classification lagging approximately 50 per cent behind the corresponding time of 1930:

1930	Total	Shipment—Domestic	Export
June	95	63	32
6 mo.	743	649	94
July	108	99	9
August	92	81	11
September	81	75	6
October	93	90	3
November	45	36	9
December	51	42	9
Year	1,191	1,050	141
1931			
January	38	33	5
February	56	50	6
March	93	84	9
April	71	48	23
May	69	69	.....
June	75	50	25
6 mo.	402	334	68

June Buying of Machine Tools at Reduced Rate

Reflecting partly a seasonal slackening, gross order index for machine tools dropped off sharply in June compared with May. The B group of the middle-sized companies suffered the largest reverse, while the A group of largest companies, the least. Shipments averaged at approximately the same level as in May. The drop in orders, while shipments were maintained, weakened the position of unfilled orders for the group. Following is a comparison of actual gross orders by months:

1930	*Index A	*Index B	*Index C	Total
June	121.8	132.7	162.2	125.8
July	78.4	124.4	132.9	91.1
Aug.	102.4	153.9	119.1	113.8
Sept.	129.7	138.8	215.9	135.9
Oct.	81.3	112.3	118.1	90.1
Nov.	56.0	67.8	96.6	60.4
Dec.	58.4	92.7	126.6	68.8
Yr. av.	119.8	146.4	164.7	127.8
1931				
Jan.	64.6	75.1	68.6	66.9
Feb.	68.3	129.8	93.1	83.7
March	109.2	133.4	180.9	117.6
April	97.7	130.3	95.0	105.1
May	81.4	104.5	105.7	87.2
June	74.3	70.3	80.7	73.6

*Note—Index A, base over $50,000; Index B, bases $10,000 to $50,000; Index C, base less than $10,000. Base: average shipments for years 1922-23-24. Totals: The total of all reports is not an average of A, B and C, but the sum of each item in percentage of the total base.

Auto Output Yielding as June Produces 250,000 Units

With the expected June decline, production of automobiles and trucks was 249,462 units in the month just passed. Loss is chiefly confined to passenger cars, truck output holding fairly well. Half-year 1931 totals are lagging behind the comparable 1930 period and Canadian production has been likewise affected. Department of commerce figures follow, Canadian figures supplied by the Dominion bureau of statistics:

1930	—United States— Total	Passenger cars	Trucks	Canada Total
June	334,506	288,481	45,562	15,090
6 mo.	2,198,580	1,860,361	333,591	110,685
July	265,533	224,690	40,467	10,188
Aug.	224,368	185,619	38,363	9,792
Sept.	220,649	177,752	41,967	7,957
Oct.	154,401	115,476	38,343	4,541
Nov.	135,754	102,358	33,787	5,407
Dec.	155,701	122,748	31,528	5,622
Year	3,355,986	2,805,516	541,534	154,192
1931				
Jan.	171,851	137,805	33,534	6,496
Feb.	219,939	179,890	39,520	9,871
Mar.	276,341	230,835	45,096	12,993
April	335,708	285,028	50,015	17,159
May	315,115	269,080	45,695	12,738
June	249,462	207,798	41,304	6,835
6 mo.	1,568,478	1,310,435	255,227	66,092

Seeks One Patent Court

American Engineering Council, New York, proposes establishment of a single court of patent appeals which, it declares, would substantially stimulate inventing and protect both the patentee and the public from enormous financial waste. It is said that the National Association of Manufacturers, Washington, approves the plan.

Scrap, Tin Plate, Rails Chief Loss in Declining Exports

EXPORTS of iron and steel products declined 15,822 tons from the May total of 91,407 tons, to reach in June a level of 75,585 tons. Imports marked a slight gain of 643 tons to 37,819 tons in June compared to 37,176 tons in May, according to the iron and steel division, department of commerce.

Exports of iron and steel during the first six months of 1931 were 661,080 tons below the 1,222,622-ton total of the first half of 1930. This downward trend was reflected in 43 of the 46 classes of products into which the trade is divided. The principal declines were in shipments of scrap, which dropped 206,780 tons; those of tin plate, 77,710 tons; rails, 35,432 tons; and steel bars, 31,244 tons. The three increases took place in cast iron pressure pipe and fittings shipments, 3004 tons, tanks, and wire nails. Twenty of the 102 countries which bought United States ferrous products increased their trade during the first half of 1931 as compared to a like period of 1930. These gains were all in small amount, however.

Though the June export trade reflected the downward trend by 34 decreases compared to 12 increases in product classifications, the gains and losses were all in relatively small amounts. The largest decline was in casing and oil line pipe, 2835 tons; followed by scrap, 2741 tons; skelp, 2218 tons; wire rods, 2120 tons; and structural shapes and plates, fabricated, 2042 tons.

The small increase of 643 tons in imports was reflected by 17 classes, while 16 classes into which the trade is divided showed small declines. The largest gain took place in merchant steel bars, 1757 tons above the May trade.

IMPORTS AND EXPORTS
Gross Tons

	——1931——		——1930——	
	Imports	Exports	Imports	Exports
Jan.	40,781	92,745	43,624	223,766
Feb.	28,045	91,212	43,326	197,225
March	40,401	109,512	56,618	238,329
April	47,872	101,081	53,686	208,604
May	37,176	91,407	54,315	195,425
June	37,819	75,585	48,953	159,273
6 mo.	232,094	561,542	300,522	1,222,622
July	.....	.....	39,083	131,580
Aug.	.....	.....	35,405	150,922
Sept.	.....	.....	40,285	131,045
Oct.	.....	.....	38,344	131,845
Nov.	.....	.....	43,098	111,979
Dec.	.....	.....	40,754	101,992
Total	.....	.....	537,491	1,981,985

ORIGIN OF JUNE IMPORTS
Gross Tons

	Steel ingots, blooms	Steel scrap	Cast iron pipe	Steel bars
Austria	.....	.....	.....	12
Belgium	1,073	.....	.....	1,799
Bermudas	.....	300	.....	.....
Canada	2	1,033	1	4
Czecho Slovakia	.....	.....	.....	105
France	241	.....	1,111	456
Germany	224	.....	.....	1,420
Mexico	.....	8	.....	.....
Netherlands	45	.....	.....	25
Sweden	5	.....	.....	274
Unit. King.	32	.....	.....	33
Total	1,622	1,341	1,112	4,128

IMPORTS OF IRON AND STEEL PRODUCTS
Gross Tons

Item	June 1931	May 1931	June 1930
Pig iron	9,333	10,057	6,789
Sponge iron	.....	.....	5
Ferromanganese, spiegeleisen (1)	1,898	1,708	7,576
Ferrochrome (2)	25	15	57
Ferrosilicon (3)	36	65	832
Scrap	1,341	1,497	2,668
Ingots, blooms	1,622	1,582	1,475
Concrete bars	3,771	3,554	
Hollow bar, drill steel	144	149	2,419
Merch. steel bars	4,128	2,371	
Iron slabs	.....	19	
Iron bars	214	33	137
Wire rods	564	669	955
Boiler; other plate	2	3	407
Sheets, skelp	1,856	2,296	3,555
Tin plate	7	4	38
Structural shapes	6,338	6,221	
Sheet piling	.....	123	13,496
Rails, fastenings	172	214	166
Cast pipe, fittings	1,112	1,696	2,313
Welded pipe	689	809	475
Other pipe	361	343	1,846
Barbed wire	857	606	368
Round wire	280	258	428
Flat wire, strip	25	48	96
Wire rope	206	160	340
Other wire	32	16	34
Hoops and bands	1,633	1,390	1,572
Nails, tacks, staples	860	750	716
Bolts, nuts and rivets	6	72	23
Castings, forgings	123	268	159
Total	37,819	37,176	48,953

(1) Manganese content.
(2) Chromium content.
(3) Silicon content.

DESTINATION OF JUNE IRON AND STEEL EXPORTS

	Galvanized steel sheets	Tin, terne plate	Black sheets	Steel bars
Argentina	36	776	57	4
Brazil	78	399	38	23
Canada	369	243	4,966	964
Central Amer.	267	.....	7	153
Chile	78	399	146	246
China	362	1,440	437	337
Columbia	161	57	1	11
Cuba	275	192	47	5
Dutch E. Ind.	44	56	.....	2
France	.....	.....	467	.....
Italy	.....	281	206	.....
Japan	41	577	202	23
Java	53	.....	.....	.....
Mexico	282	514	412	26
Norway	47	.....	5	10
Panama	31	.....	2	82
Philippines	3,557	246	8	339
Peru	43	.....	.....	98
Soviet Russia	.....	.....	15	58
United King.	2	.....	560	545
Uruguay	15	490	10	.....
Venezuela	84	3	.....	8
Total	5,879	5,413	7,645	2,921

ORIGIN OF JUNE IMPORTS
Gross Tons

	Iron ore	Pig iron	Manganese	Ferromanganese
Algeria	11,460	.....	.....	.....
Albania	.....	.....	.....	40
Brit. India	.....	7,509	780	.....
Brazil	25	.....	6,621	.....
Canada	49	77	.....	804
Chile	65,944	.....	.....	.....
Cuba	11,000	.....	.....	.....
France	.....	.....	.....	21
Gold Coast	.....	.....	5,727	.....
Italy	.....	.....	.....	102
Mexico	128	.....	.....	.....
Netherlands	.....	1,251	.....	.....
Newf'dland	11,300	.....	.....	.....
Norway	6,566	.....	.....	627
Sweden	.....	200	.....	.....
Soviet Russia	15,424	.....	23,791	.....
United King.	.....	296	51	304
Total	121,896	9,333	36,970	1,898

EXPORTS OF IRON AND STEEL PRODUCTS
Gross Tons

Item	June 1931	May 1931	June 1930
Pig iron	764	812	1,000
Ferromaganese, spiegelisen	1,036	1	1,050
Iron and steel scrap (including tin plate scrap)	10,490	13,231	37,201
Ingots, blooms	36	240	1,675
Bars, iron	133	104	112
Bars, steel	2,921	3,282	7,245
Bars, alloy steel	87	317	475
Wire rods	2,412	4,532	4,479
Boiler plate, not fabricated	4,495	5,338	6,276
Skelp	3,534	5,752	7,239
Iron sheets, galv.	160	426	549
Steel sheets, galv.	5,879	6,053	7,068
Steel sheets, black.	7,645	5,082	6,862
Hoops, bands, strip	1,695	3,066	3,249
Tin, terneplate	5,413	6,129	14,181
Shapes, not fabr.	8,139	7,548	10,229
Shapes, plates, fabr.	1,242	3,284	5,317
Metal lath	108	228	338
Frames, sashes and sheet piling	227	234	3,255
Rails	1,699	3,190	7,750
Rail fastenings	729	574	2,031
Boiler tubes	463	581	936
Casing, pipe, seamless and welded	1,326	4,161	3,310
Malleable-iron screwed pipe fittings	340	468	680
Cast-iron pressure pipe and fittings	2,502	1,602	1,001
Cast-iron soil pipe and fittings	209	576	1,632
Welded black, galv. steel pipe	4,292	4,055	7,352
Welded black, galv., wrought pipe	638	554	1,036
Plain black or galv. wire	964	1,181	1,872
Barbed wire, woven-wire fencing	1,705	3,028	4,790
Wire rope	194	254	450
Insulated wire, cable	24	18	17
Other wire	335	345	625
Wire nails	616	585	625
Tacks	48	35	47
Bolts, nuts, rivets	344	495	783
Iron castings	259	308	753
Steel castings	114	260	769
Car wheels, axles	370	620	1,653
Forgings	551	889	678
Total	75,585	91,407	159,273

Industrial Men in the Day's News

L. A. Paddock, New President, American Bridge Co., Pittsburgh

DRAFTSMAN of Canadian Bridge Co. Ltd. in 1904, he now becomes executive head of United States Steel Corp.'s chief fabricating division.

BY 1927 he had risen to the presidency of the Canadian interest, becoming in turn superintendent, vice president and general manager and president.

FOUR years ago he was transferred to Pittsburgh, succeeding the late Joshua A. Hatfield as vice president.

NEWLY elected president of American Bridge Co., Pittsburgh, as noted in STEEL of July 23, L. A. Paddock has gained a wealth of experience both in this country and Canada. In 27 years he has risen from the position of draftsman to the office he now holds, filling the vacancy caused by the death July 4 of Joshua A. Hatfield. Since 1927 Mr. Paddock has been vice president of the American Bridge Co., located at Pittsburgh. He will continue in that city where general offices and headquarters of the company now will be situated instead of at New York, as for several years in the recent past.

Born at Pontiac, Mich., Feb. 26, 1879, Mr. Paddock received his technical training at the University of Michigan, Ann Arbor, Mich. He was graduated with bachelor of science and civil engineering degrees. His entry into the field of civil engineering was in 1904 when he became affiliated with the Canadian Bridge Co. Ltd., Walkerville, Ont., as a draftsman. He remained with this company until 1927, and during these 23 years successively held the positions of draftsman, superintendent, vice president and general manager and president, being elected to the latter office in 1924. In 1927 he was transferred to Pittsburgh to become vice president of the American Bridge Co., when Mr. Hatfield was advanced from that position to the presidency.

Mr. Paddock is a director of American Bridge Co., and also holds directorships in Canadian Bridge Co. Ltd., and the Essex Terminal railway. His club affiliations include Detroit Athletic association, Detroit University club, Detroit, and the Pittsburgh Country club, Pittsburgh.

HOWARD E. Jeffries, assistant treasurer, Carnegie Steel Co., Pittsburgh, since Jan. 1, 1920, has been made treasurer to succeed W. C. McCausland, who has occupied that office for the past 30 years and who retires Aug. 1.

Mr. McCausland has been with the company for almost 44 years. He was born Aug. 9, 1861, in Pittsburgh, where he attended grade and high schools. He was first employed by Bailey Farrell & Co., and his first connection with the steel industry was in 1897 as an assistant bookkeeper with Carnegie, Phipps & Co. Ltd. He subsequently became cashier of that company, remaining in that capacity when the company became Carnegie Steel Co. Ltd. He was made assistant treasurer of Carnegie Steel Co., and about April, 1901, he was made treasurer, continuing in that office until his recent retirement.

Mr. Jeffries, the new treasurer, was born Aug. 30, 1871, in Circleville, Westmoreland county, Pa. He was first employed by Carnegie, Phipps & Co. Ltd., in 1887, as office boy. He became successively cost and manifest clerk, cashier's assistant and city collector, loan agent, treasurer of Carnegie Natural Gas Co., and finally assistant treasurer of Carnegie Steel Co.

William I. Dithridge, cashier of Carnegie Steel Co., becomes assistant treasurer, succeeding Mr. Jeffries. He has been with the accounting and treasury department since May 25, 1900.

William Donald, auditor of Carnegie Steel Co., has been elected a member of the board of directors.

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E. W. Kennedy, who since the formation of Republic Steel Corp., Youngstown, O., has been head of the statistical department, having held the same position with the sales department of Trumbull Steel Co., Warren, O., prior to the merger, has been assigned to Detroit sales office of Republic Steel Corp., with similar duties, effective Sept. 1. At one time Mr. Kennedy was identified with the sales department of American Sheet & Tin Plate Co., and later was in the purchasing department of General Motors Corp., Detroit.

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Warner Seely, secretary, Warner & Swasey Co., Cleveland, has been

appointed chairman, industrial division, Cleveland community fund.

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E. W. Hopkins has retired from active service as Gogebic range manager, Oglebay-Norton Co., Cleveland.

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William C. Cary, 1313 Santa Fe building, Dallas, Tex., has been appointed district sales manager, Patterson Steel Co., Tulsa, Okla.

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H. O. McCulley was recently elected president of Erie Bolt & Nut Co., Erie, Pa., to succeed Lincoln Davis, who has retired from active participation in the business.

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George W. Cobb, general manager of sales, American Can Co., New York, was recently added to the directorate of United States Pipe & Foundry Co., East Burlington, N. J.

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R. S. Rubincan has been elected president and general manager of William A. Box Iron Works, Denver, filling the vacancy caused by the death of William A. Box, noted in STEEL of June 18.

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R. D. Livingston, formerly vice president of Signode System Inc. and its successor, Signode Steel Strapping Co., Chicago, has been appointed general manager of Consolidated Steel & Wire Co., Buffalo, manufacturer of box strapping, bale ties, package reinforcement equipment, etc., with headquarters at 18 Tremont street, Boston.

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Mark Hoeper, a former official of the Jenkins Machine Co., Sheboygan, Wis., and who recently rejoined it as general manager, was elected trustee of the company at a recent meeting of the creditors called as the result of receivership proceedings. The Jenkins company is being maintained as a going concern, transacting business of selling parts.

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Fred T. Whiting, assistant manager, northwest district, Westinghouse Electric Mfg. Co., East Pittsburgh, Pa., has been appointed district manager of the region with headquarters at Chicago. He will have charge of company activities in Illinois, Wisconsin, Minnesota, Iowa, Nebraska, Wyoming, North Dakota, South Dakota, and parts of Indiana and Montana. Mr. Whiting has been with the Westinghouse company since 1913.

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Edward J. Mehren of Chicago has been appointed president of the Portland Cement association, 33 West Grand avenue, Chicago. Born in Chicago in 1881, Mr. Mehren was educated at the University of Illinois. After serving Chicago, Milwaukee & St. Paul railway for about a year, he entered the employ of the McGraw-Hill Publishing Co., New York, as associate editor on *Engineering Record* in 1907. In 1917 he was elected vice president and editorial director, and latterly has been in charge of the company's activities in the Middle West. Mr. Mehren is the first president the Cement association has had outside its own ranks and the first to devote his entire time to the organization.

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W. G. Krueger, identified with Chicago Pump Co., Chicago, for many years, has been appointed Buffalo district manager, with headquarters at 91 Tremont street, Kenmore, Buffalo. Other recently appointed district representatives are as follows:

Edwin J. Richard, 528 Chamber of Commerce building, Cincinnati, for Cincinnati territory; Drake Engineering Co., 915 Reibold building,

Howard E. Jeffries

Dayton, O., for the Dayton district; Oklahoma Heating Supply Co., 232 Commerce Exchange building, Oklahome City, Okla., with R. I. Ludwig, sales manager, for the Oklahoma City territory; and R. W. Lamkin, Pyramid Life building, Little Rock, Ark., and William C. Craig, 244 Kennedy building, Tulsa, Okla., for their respective territories.

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Charles D. MacGillivray was recently elected secretary, Baldwin Locomotive Works, Philadelphia, to succeed the late Arthur L. Church.

J. Harrison Kerst, identified with the company for many years, was elected assistant secretary.

They were elected secretary and assistant secretary, respectively, of two Baldwin subsidiaries, Standard Steel Works Co., and Baldwin-Southwark Corp.

Mr. MacGillivray was born in Cambridge, Mass. For five years he held a commission as paymaster in the United States navy and since 1923 has been secretary to George H. Houston, now president of Baldwin Locomotive Works.

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John Farris, president of the Farris Engineering Co., Pittsburgh, has been elected president of the Pittsburgh chapter, American Society of Civil Engineers, for the coming year. P. J. Reich, division engineer for the American Bridge Co., has been made vice president and Nathan Shein has been re-elected secretary.

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Robert S. Weatherly, sales manager since 1928 for the Swann Chemical Co., Birmingham, Ala., maker of ferromanganese, ferrophosphorus, etc., has been made vice president. He has been with the Swann Corp. since 1923. He also is vice president of Federal Abrasives Co., another Swann subsidiary.

George Y. Frankle, who has been with Grasselli Chemical Co., Gadsden and Birmingham, Ala., for 17 years, latterly directing sales in the Birmingham territory, succeeds Mr. Weatherly as sales manager of Swann Chemical Co.

Obituaries

GEORGE S. SCOVEL, 71, for 40 years with the metal and supply trade of California, died July 11 at San Francisco. He commenced with Paddock-Hawley Iron Co., St. Louis, but about 1891 removed to California, becoming a partner in Lloyd-Scovel Iron Co. In 1908 the George S. & H. H. Scovel Co. was formed which later was incorporated as Scovel Iron Store Co. This in 1927 was consolidated to form Waterhouse, Weinstock, Scovel Co. Since then Mr. Scovel served as president and chairman until he retired in February, this year.

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Leo. I. Heintz, president of Heintz Mfg. Co., Philadelphia, died July 8.

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Sherwood M. Chase, 65, vice president and general manager, Chase Foundry & Mfg. Co., Columbus, O., died July 20.

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Albert Jones, 65, general superintendent, Canadian Bridge Co. Ltd., Walkerville, Ont., died July 18 as a result of an automboille accident. Burial took place at Youngstown, O.

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Jesse B. Garber, 69, with the Deming Co., Salem, O., since 1885, for 32 years its superintendent, died at Youngstown, O., recently as a result of an automobile accident in March.

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Frederick A. Hetherington, 71, who until his retirement four years ago was head of Hetherington & Berner Inc., Indianapolis, structural iron

(*Continued on Page* 55)

Here and There in Industry

EUCLID CRANE & HOIST CO. and Armington Engineering Co. have approved a plan of merger whereby the manufacturing facilities and engineering experience of the two companies are combined in the Euclid Crane & Hoist Co., whose name has now been changed to the Euclid-Armington Corp., Euclid, O. The company's line includes electric and hand-power cranes from slow-speed power house cranes to high-speed heavy-duty mill type cranes in capacities of ½ to 100 tons; electric hoists, trolleys, winches, cupola chargers, ladle trolleys and similar equipment from ¼ to 20 tons.

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Crowell & Murray Inc., Cleveland, will have its offices and laboratories in its own building, 2830 Washington avenue, N.W., after July 31.

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Buffalo Steam Pump Co., Oliver street and East avenue, North Tonawanda, N. Y., has changed its name to Buffalo Pump Inc., with offices at 490 Broadway, Buffalo.

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Marshall Supply Co., Tulsa, Okla., has been appointed Eastern Oklahoma distributor for the Carborundum Co., Niagara Falls, N. Y., manufacturer of abrasive products.

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Auburn Rag & Metal Co., Auburn, N. Y., has bought for $10,350 the Auburn & Northern Electric railroad, connecting Auburn and Port Byron. The line will be dismantled and the materials sold.

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General American Tank Car Corp., Chicago, finds greater demand from manufacturers and users of chemicals for special tank cars. As a result, activity has increased during the last 90 days at the company's ten repair plants.

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Newark Wire Cloth Co., 351-365 Verona avenue, Newark, N. J., manufacturer of wire cloth, has appointed the Pacific Metals Co. Ltd. as west coast representative. Limited stock will be carried both in Los Angeles and San Francisco.

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Modine Mfg. Co., Racine, Wis., heat radiation apparatus and unit heaters, is operating its plant overtime to handle substantial orders recently booked. The improvement and enlargement of the plant will be completed in a few weeks, obviating the necessity of renting outside space, it is stated.

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Louisville Enameled Products Co., Louisville, Ky., is about to pass to the control of P. B. McBride and associates, who have purchased the controlling interest from the Ferro Enamel Corp., Cleveland. Transfer is to be made not later than Sept. 1. Expansion of the line of enameled products is understood to be planned under the new management.

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Scott Steel Co., 110 South Dearborn street, Chicago, has bought the complete inventory of S. W. Lindheimer Inc., 38 South Dearborn street, dealer in rails, track accessories and steel sheet piling. The latter company is retiring from business. Charles I. Lamm, sales manager, has joined the Scott organization as manager of sheet piling and rail sales.

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Melaun Mfg. Co., 144 East Morris street, Indianapolis, maker of sheet metal stampings and other metal products, has been reorganized and recapitalized. Additions to the plant are under consideration. Herman H. Melaun continues as president and Harry E. Steiner will be vice president in charge of sales. Lon R. Smith, for two years sales executive of the Hercules Motors Corp., will be secretary and treasurer.

□ □ □

General Machinery Corp. has bought for cash and stock the business of the Putnam Machine Tool Co., Fitchburg, Mass., a subsidiary of Manning, Maxwell & Moore Inc. Its products, largely railway machine tools, will continue to be manufactured, being consolidated with the Niles Tools Works Co., Hamilton, O., a subsidiary of General Machinery Corp. The acquired company will be known as Putnam Machine Co. division of General Machinery Corp. G. A. Rentschler, president of General Machinery Corp., will be president of the Putnam division.

□ □ □

American Radiator Co., subsidiary of the American Radiator & Standard Sanitary Corp., has acquired all capital stock of the American Gas Producers Corp., another step in the latter company's program for expansion in the manufacture and distribution of gas-fired equipment for heating, plumbing and public utilities. Campbell Metal Window Corp., another subsidiary, has become affiliated with the Maxim Silencer Co., Hartford, Conn., in the manufacture and sale of a room silence device to be known as the Maxi-silencer and air filter.

□ □ □

Kinite Corp., Milwaukee, has opened a plant at Fairmont, W. Va., to specialize in the manufacture of electric furnace iron castings for glass plants. The plant is making castings for the Fairmont mold plant of the Owens-Illinois Glass Co. and will supply other plants in that section. Previously this work has been done at the Kinite plant at Toledo, O., which will continue to produce the company's alloy steel for various uses.

Using Wider Steel Plates In Battledeck Floors

Advantages of welded steel battledeck floor construction were pointed out to some 40 Cleveland engineers and architects at a demonstration in the Carnegie Steel Co. warehouse in that city on July 24. Suggested by the American Institute for Steel Construction Inc., originator of the type of construction, the demonstration was arranged jointly by the Carnegie company and the Lincoln Electric Co., Cleveland.

The steel plates and I-beams were supplied by the Carnegie company, while the Lincoln company furnished the arc welding equipment and operator. A floor panel 8 x 8 feet was constructed, using two 4 x 8 feet 3/16-inch plates. These were metal arc welded to light I-beams spaced on 2-foot centers.

Previous battledeck floors have utilized plates 2 feet wide and this has necessitated seams over each I-beam. Equally satisfactory results can be obtained when plates 4 feet wide are used; in this case, 13/16-inch holes spaced on 12-inch centers are punched down the center of the plate and through these holes the plate is welded to the I-beam below.

The Lincoln company now has under development an automatic welding machine using a carbon electrode and with its use it will be possible to weld the plate to the I-beam without the necessity of punched holes. This process, although of the arc type, gives results which are the same as in spot welding. Welding time will be reduced to about one-third of that required with the metal arc method.

The American Institute for Steel Construction has developed a method for securely fastening wood sleepers to the steel plates when wood floors are to be laid on top of the steel. Small holes are drilled through the sleepers and plates and into these holes are driven slightly larger threaded steel nails which tap their own threads. It is impossible to pull the sleepers loose when so fastened down.

MIRRORS of MOTORDOM

DETROIT

FORD MOTOR CO. began closing at Dearborn, Mich., July 29, apparently for the month of August, two weeks later than it suspended operations for the midsummer vacation in 1930.

With Ford out of the picture, August's automobile history is expected to go down somewhat in this manner: Chevrolet with undisputed lead to make approximately 50,000 units; Plymouth in second place expecting to turn out 30,000, but no doubt some less; the balance of motordom making in aggregate an indeterminable amount, but beneath what it did in July—indeterminable largely, due to the inroads of not only vacations but curtailed operations of those plants remaining open. August's output will sag to a probable new low for 1931, no doubt beneath the previous bottom, January's production of 171,462 units.

By actual count, production has been slipping from the high of the year set in April when 335,708 units were turned out. May was lower; June witnessed the output of 249,462 passenger cars and trucks. Though too soon for the exact total it is quite evident July production was somewhere close to 200,000 units. August is expected to end a five-month successive decline.

New Dodge Series Soon

Where there were but two hats in the ring, now there are three. Plymouth is forging step-by-step into the former two-sided race for low-price supremacy.

Highly encouraged by its sales, pointing with pride to a large unfilled order book, Plymouth couples its claim of 21,500-unit production for July, to the intention that it will make 30,000 models in August. Last week specifications were given to several partsmakers for a lot of 30,000 cars, part July, part August output.

Last week's production in the Plymouth plant was off about 1000 units to 4500 cars. The offset, only temporary, was due to necessary increases at DeSoto and Dodge. Dodge, by the way, is embarking on a large program of retooling and new dies, significant of a coming series.

Ford averaged 5000 units daily last week, three days. Some 1500 of this figure were trucks, the balance passenger cars. On July 23 announcements were posted in the Ford plant that it would be closed completely for the entire month of August. Ford receives no incoming shipments after July 29 without special arrangements being made with the receiving department. A large Ford partsmaker at Toledo, O., closed July 23 to reopen Sept. 1.

Chevrolet Change Near

Chevrolet continues on its four and three-day week, alternately, making some less than a generally reported 20,000 models in the week.

Chevrolet has a new silent transmission in mind for coming models. A recent order for over 30 gear hobbers placed with an eastern machine tool manufacturer presages a change similar to Buick's change to syncromesh. Before its transmission change over a year ago similar gear hobbers were ordered by Buick.

Buick is making 300 daily, four days; Olds' production schedules average 250 daily four days; Oakland is close to 425 a day, four days; Cadillac-LaSalle is dark.

Nash maintains its rate at around 440, five days; Willys-Overland makes 400, four days; Studebaker at just under 300, five days, is outlining a large retooling program that calls as well for new dies—and presumably, a new series somewhere in the offing. Reo is continuing at 100, five days; Packard makes 90 cars for each of five days of the week; Hupp two days last week made 200 cars; Hudson-Essex with a new Hudson sedan now announced average 375 units for each of two days last week.

Chrysler is close to 300 models, four days, and DeSoto has improved, for the week at least, to 200, 5½ days.

What inroads can the new Plymouth be expected to make on Ford and Chevrolet?

Plymouth, now making around 1000 to 1200 cars a day, is at capacity. As has been announced part of the Dodge and DeSoto facilities have been taken over.

Yet production of 30,000 Plymouths in a month would indeed be a vast number. Ford could make seven times that figure in a month; Chevrolet approximately four.

Nonetheless, initial success of a third in the low-priced field signalizes keener competition, brings Ford and Chevrolet closer to grips and cuts into the sales of both.

Ford sales have been 49 per cent under the same period in 1930. Ford, sooner or later, will find it necessary to recapture this lost business with drastic measures. The success of the new Plymouth accentuates that action cannot be delayed much longer. Indications point that Ford's move is in the immediate offing, not long forthcoming.

"G. M." Is Widely Held

That General Motors stock is widely held here and abroad is indicated by a recent survey. In the United States 250,168 people are owners. Delaware leads with 17,040,090 shares in its confines, chiefly due to du Pont interests; New York is second, Michigan third. But New York leads in the number of stockholders, with 51,175.

Abroad, 70 countries are the homes of "G. M." holders, all the way from a lone stockholder in Danzig with his three shares on up to 4133 people with their 379,137 shares in Canada.

In all, 285,615 people own the stock. Only 6 per cent of this total own 100-share lots or more. Forty-five per cent of them own ten shares, or less. One in every three is a woman.

EDITORIAL

Production of Steel Is Less Concentrated

SOON after steelmaking on the south shore of Lake Michigan assumed importance, it was predicted that the American steel industry would drift westward at a rapid rate. In many quarters it was expected that Pennsylvania would lose its proud position as the leading producer of the country.

Time has proved that the units of the industry are more firmly anchored than was generally believed. Pennsylvania still tops all states by a generous margin in the annual output of steel ingots and castings. Moreover, the statistics of the last 10 years show that while the production of steel is more widely distributed today than it was a decade ago, there has been no appreciable drift to the westward.

The percentage of the total production attributed by the American Iron and Steel institute to the states of Pennsylvania, Ohio, Illinois-Indiana, and all other states for 10 years is as follows:

PRODUCTION OF STEEL INGOTS AND CASTINGS
(Percentage of Total)

Year	Pennsylvania	Ohio	Illinois-Indiana	All other
1921	41.4	23.8	20.0	14.8
1922	39.6	25.7	18.4	16.3
1923	39.3	25.5	18.8	16.4
1924	38.4	25.7	18.5	17.4
1925	36.4	26.2	19.6	17.8
1926	37.7	24.5	19.6	18.2
1927	35.5	24.1	20.5	19.9
1928	34.4	25.1	20 6	19.9
1929	35.7	23.4	20.3	20.6
1930	35.4	22.5	20.6	21.5

Ratio of Illinois-Indiana To Total Remains Nearly Constant

The most significant feature of this comparison is the surprising uniformity in ratio of the Illinois-Indiana output to the total of the country. The Lake Michigan branch of the industry is shown by these figures to be keeping almost perfect step with the entire industry. Ohio seems to be slipping slightly, while Pennsylvania gave ground noticeably.

Percentages lost by Pennsylvania and Ohio were gained by states other than Illinois and Indiana. Contrary to general belief, these gains were not pre-eminently in the West and Middle West, but were fairly well distributed throughout the country. Delaware, Maryland, District of Columbia and Virginia in 1921 produced only .8 per cent of the country's steel, whereas in 1930 their output was 3.6 per cent of the total. This increase reflects to a large degree the expansion of operations at Sparrows Point, Md.

West Virginia, which in 1921 accounted for only 2.3 per cent of the total, in 1930 produced almost 3 per cent. Georgia, Florida and Alabama, with 3.6 per cent at the beginning of the decade, had 3.2 per cent in 1930. California, with negligible assistance from the Canal Zone and Alaska, produced .5 per cent in 1921 and 1 per cent in 1930. Colorado, with Kansas, Oklahoma and Washington accounted for 1.5 per cent in 1921 and 1.7 per cent in 1930. Michigan, with only 11,000 tons in 1921, enjoyed an output of 484,000 tons, or 1.1 per cent of the country's total in 1930. The changes in other states are not sufficiently marked to be significant.

Influence of Waterway Facilities May Weigh Heavily in Future

From the foregoing it is evident that the 10-year period has not witnessed a pronounced drift of production toward any one locality. To the contrary, the figures show that the domination of Pennsylvania and Ohio is being cut slightly and that the gains—representing only a small percentage of the total output—are distributed quite evenly to the Atlantic seaboard, the Lake states and to the Pacific states.

The most likely aspirants for an increased percentage in the next decade are Michigan and Indiana. During the past few years the activity in the Detroit area has indicated that steelmakers are convinced of the advantages of this locality for making steel. Extensions and contemplated construction in the vicinity of Gary likewise evidence the faith of steel companies in the advantageous location of the dune section. In both districts the factors of water transportation and proximity of markets weigh heavily.

Therefore while the records of a brief decade show that the industry is spreading out in several directions rather than drifting toward a new center, the next 10 years may witness a more definite trend toward preferred localities. If transportation continues to be the important factor it now is, the drift undoubtedly will be toward advantageous lake and river sites.

THE INDUSTRIAL DIAL

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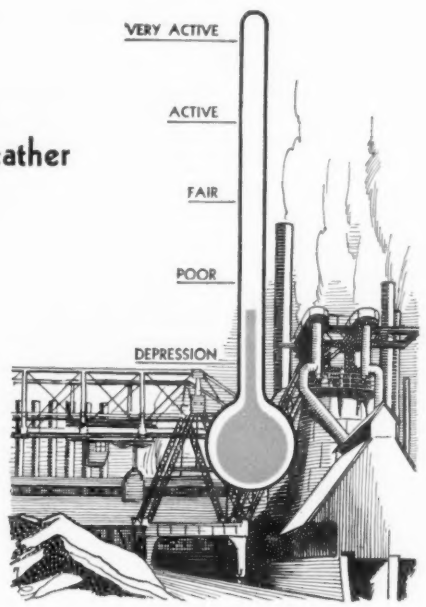
JUNE will be remembered in business history as the month in which the proposal of a moratorium for international debts, aided by a number of lesser factors, brought cheer to business leaders, for a brief time turned the trend of many commodity prices and stimulated a strong recovery in stock prices. While the direct results on business did not last long, inasmuch as prices of commodities within two weeks dropped back into their habitual downward glide, still the influence of this first step in correcting world credits has not been lost entirely. Strengthening the weak spots of finance in important nations is a necessary step in paving the way for a world march out of depression.

Industrial Weather



TREND:

Unsettled

Activity

While attention was being focused on foreign affairs, industrial activity at home was diminishing. The federal reserve board's index of industrial production for June was 86, a drop of 3 points. Output of pig iron and steel ingots was down sharply, and operations of steelworks at the end of the first half had receded to 35 per cent of capacity.

Prices

Strength of many commodities during the latter part of June carried Bradstreet's index of wholesale commodity prices up to $8.77 as of July 1, a gain of 13 cents over June 1. The recovery was more than wiped out by a new dip in prices which has continued to date throughout July. Iron and steel prices, which showed signs of stabilization in June, have dropped only slightly in July. STEEL's composite for June stood at $31.02, and thus far in July has receded only 4 cents to $30.98.

Where Business Stands

Monthly Average, 1930—100

	June, 1931	May, 1931	June, 1930
Steel Ingot Output	62.6	75.5	107.2
Pig Iron Production	63.3	74.7	113.5
Freight Movement	85.1	82.8	105.7
Building Construction	82.1	91.5	113.4
Automobile Output	87.6	107.7	119.5
Wholesale Prices	81.6	80.3	98.2

Demand

Steel requirements of practically all of the principal consuming industries were tapering off in June. Automobile production, building awards, machine tool orders, exports, and many other indications of activity affecting steel demand were lower in June than in May. Revenue freight loadings, reflecting the status of transportation, in June barely exceeded the weekly average for May.

Purchases of steel, which now probably are at the lowest ebb, are at least 60 per cent above the lowest volume in 1921. Prices today, however, are about 25 per cent lower. Ten years ago the break in the depression came in July, but prices did not turn upward until February, 1922.

Business Trend Charts of the Month

Production

Steel ingot production ..... July 16, p.37
Pig iron production ..... July 16, p.37
Blast furnace production rate ..... July 16, p.36
Coke output ..... July 30, p.29
Industrial production ..... July 2, p.37; July 30, p.29
Coal production ..... July 2, p.39

Demand

Unfilled orders, U. S. Steel Corp. ..... July 16, p.35
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Building construction ..... July 23, p.29
Steel castings ..... July 2, p.41
Structural steel sales ..... July 9, p.29
Steel sheets ..... July 23, p.30
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Prices

Bradstreet's index ..... July 9, p.27
Iron and steel price index ..... July 16, p.38
Basic iron—heavy melting steel ..... July 16, p.38
Foundry pig iron ..... July 9, p.28
Iron and steel parity ..... July 9, p.29

Miscellaneous

Foreign trade ..... July 23, p.28
Freight traffic ..... July 2, p.38; July 23, p.27
Commercial failures ..... July 9, p.28
Refined copper ..... July 23, p.28
Railroad earnings ..... July 23, p.29
Building cost index ..... July 2, p.38; July 30, p.30
Iron and steel foreign trade ..... July 2, p.41

Thumb Nail Sketches Of Business

Wheat at 50 Cents

Fifty-cent wheat, registering a new low value for that grain, complicates the farm problem. This low price comes at a time when the department of agriculture estimates the 1931 crop at 869,000,000 bushels—slightly higher than the 863,000,000 bushel yield of 1930. The Canadian crop will be less than 250,000,000 bushels, compared with 398,000,000 in 1930. Russian acreage is estimated at 7 per cent more than last year. Other foreign wheat yield will be less than in 1930. Thus Russia and the United States promise larger crops; the rest of the world smaller crops.

Employment

Average weekly earnings, payroll totals and industrial employment in June declined more than seasonally. The promise of a moderate recovery in business in the fall is the only bit of relief in sight to help prepare American wage earners for the rigors of winter.

Wage Earner's Living Costs Lower

According to estimates of the United States bureau of labor statistics, wage earner's living costs in June were about 50 per cent above the 1913 average. When the various items are weighted according to a family budget as of 1918-19, the figures for June (average 1913 = 100) are as follows: Food 120, clothing 140, rent 140, fuel and light 165, household furnishings 185 and miscellaneous 205. The sharpest declines have occurred in the prices of food and clothing. In all items, prices now are below the lowest point reached in the 1921-22 depression.

Automobile Output

Motordom is at the theshold of its summer vacation period. Production held up surprisingly well in the first half of July, but dropped sharply in the last two weeks. With a number of builders curtailing for August, output in that month will be at low ebb. Total production in the first half of 1931—1,632,971 units—was 29 per cent under the total for the first half of 1930. Output in the last half probably will be short of that of the first six months.

Blast Furnace Activity Now and in 1921

When the blast furnace statistics for June showed a loss of 14 stacks, following a loss of 8 in May, the decline appeared precipitous. Yet in 1921 the total number of active stacks dropped from 184 in January to 69 in July—a shrinkage of 115 in six months! In June this year the average daily output was 54,599 tons, with 91 stacks active. In June, 1921, the daily average was 35,466 tons, with 74 stacks in blast. Ten years ago the lowest point came in July when the daily average was only 27,892 tons.

Wool Industry Is Exception

For several months wool manufactures have gained. In June this advance was maintained. Consumption of wool is well above the seasonal trend.

The Barometer of Business

Industrial Indicators

	June, 1931	May, 1931	June, 1930
Pig iron output (Daily average, tons)	54,599	64,355	97,817
Machine Tool Index	88.6	103.3	146.7
Unfilled orders (tons)	3,479,323	3,620,452	3,968,064
Ingot output (Daily average, tons)	79,843	96,365	136,741
Dodge Bldg., awards in 37 states (sq. ft.)	35,000,000	38,940,000	48,214,200
Automobile output	256,297	315,115	349,596
Coal output, tons	28,646,000	28,333,000	33,683,000
Business failures, number	1,993	2,248	2,026
Business failures, liabilities	$51,655,648	$53,371,212	$63,130,762
Cement production, Bbls.	14,125,000	14,006,000	17,237,000
Cotton consumption, bales	455,388	465,770	405,235
Car loadings (weekly average)	747,937	747,296	929,762

Financial Indicators

	June, 1931	May, 1931	June, 1930
25 industrial stocks	$195.22	$199.46	$284.36
25 Rail stocks	$67.12	$68.69	$113.84
40 Bonds	$82.84	$83.19	$87.26
Bank clearings (000 omitted)	$38,859,721	$36,795,631	$49,104,456
Commercial paper rate (N. Y., per cent)	2	2-2½	3½
*Commercial loans (000 omitted)	$7,945,000	$7,885,000	$8,525,000
Federal Reserve ratio, per cent	84.1	85.3	80.7
**Railroad earnings	$41,263,621	$39,074,311	$69,322,585
Stock sales, N. Y. stock exchange	58,718,657	46,663,292	76 593,250
Bond sales, par value	$266.359,450	$241,287,800	$226,148,300

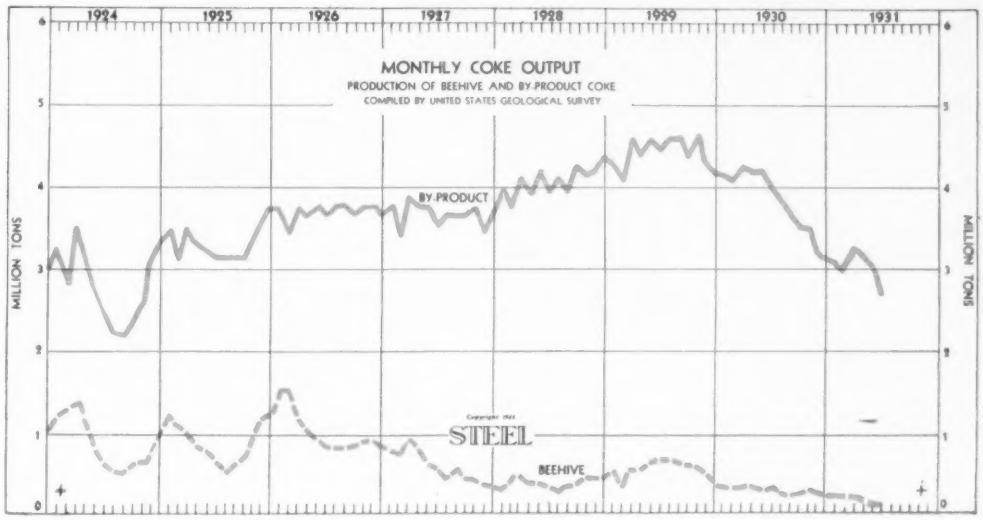
*Leading member banks Federal Reserve System.
**May, April and May, respectively.

Foreign Trade

	June, 1931	May, 1931	June, 1930
Exports	$187,000,000	$203,991,000	$294,701,000
Imports	$176,000,000	$180,164,000	$250,343,000
Gold exports	$39,000	$628,000	$26,000
Gold imports	$63,887,000	$50,258,000	$13,938,000

Commodity Prices

	June, 1931	May, 1931	June, 1930	Monthly average, 1913
STEEL's composite average of 14 iron and steel prices	$31.02	$31.37	$33.53	$26.32
Bradstreet's index	$8.77	$8.64	$10.56	100
Wheat, cash (bushel)	93c	95c	$1.19	92c
Corn, cash (bushel)	70c	78c	95c	51c
Petroleum, crude (Bbl.)	32c	57c	$1.25	$2.50



By-Product

	Tons
June, 1931	2,715,173
May, 1931	3,125,571
June, 1930	3,953,846

Beehive

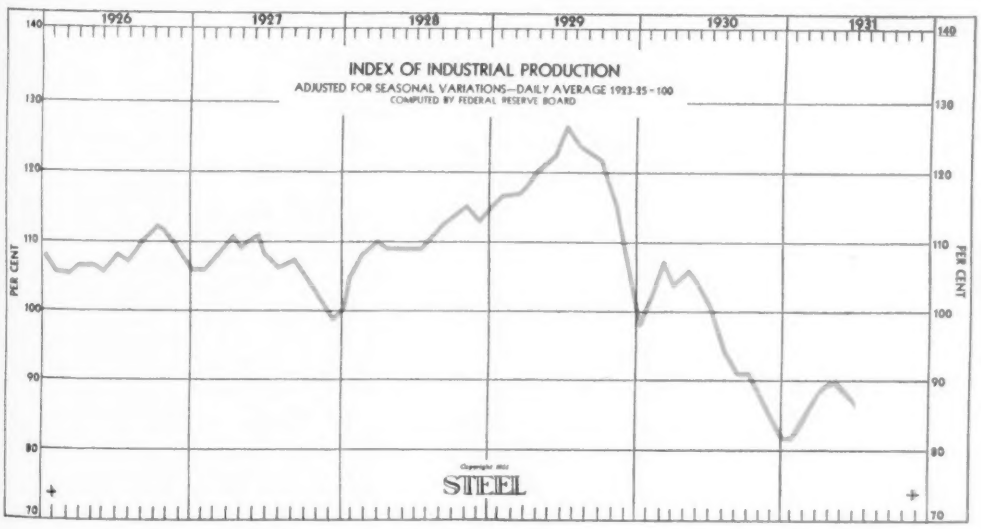
June, 1931	87,300
May, 1931	93,900
June, 1930	261,600

By-Product Coke Output Decreases 10.2 Per Cent during June

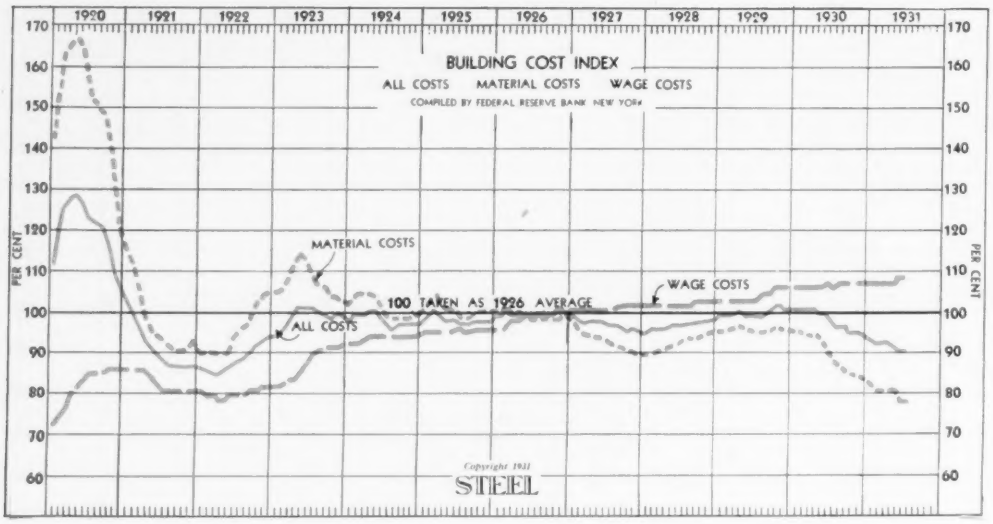
Coke production took another dip in June, the total output of 2,802,473 tons comparing with 3,219,471 tons in May. It was 1,413,000 tons under the production of June, 1930. Beehive coke slumped to another new low, 87,300 tons or 3358 tons per day. By-product tonnage was 2,715,-173, or 90,506 tons per day, compared with a daily rate of 100,825 tons in the previous month and 131,795 tons a year ago. The drop in by-product coke, in May 3.9 per cent, was 10.2 per cent in June. The decrease was entirely at furnace plants. In the first half of 1931, compared with last year, beehive output was down 55.7 per cent and by-product output was 27.2 per cent less.

Industrial Production Index Loses Three Points As Manufactures Decline

The federal reserve board's index of industrial production registered a further retreat in June with a drop of three points during the month. The combined index, seasonally adjusted, fell to 86. The principal reduction was in manufactures, which were at 86 in June, compared with 90 in the previous month. Minerals dropped one point to 85. A year ago, the index and its components all were at 100. In the manufacturing classification iron and steel again was one of the leaders in the downward trend, going from 72 to 64, compared with 109 a year ago. Automobile production fell from 77 to 65, compared with 91 in June, 1930. In mining, iron ore jumped from 27 to 46.



	1931	1930
June	86	100
May	89	104
April	90	107
March	88	104
Feb.	86	107



All Costs

	Per cent 1931	1930
June	92	98
May	92	100
April	93	100

Material Costs

June	78	90
May	78	93
April	81	95

Wage Costs

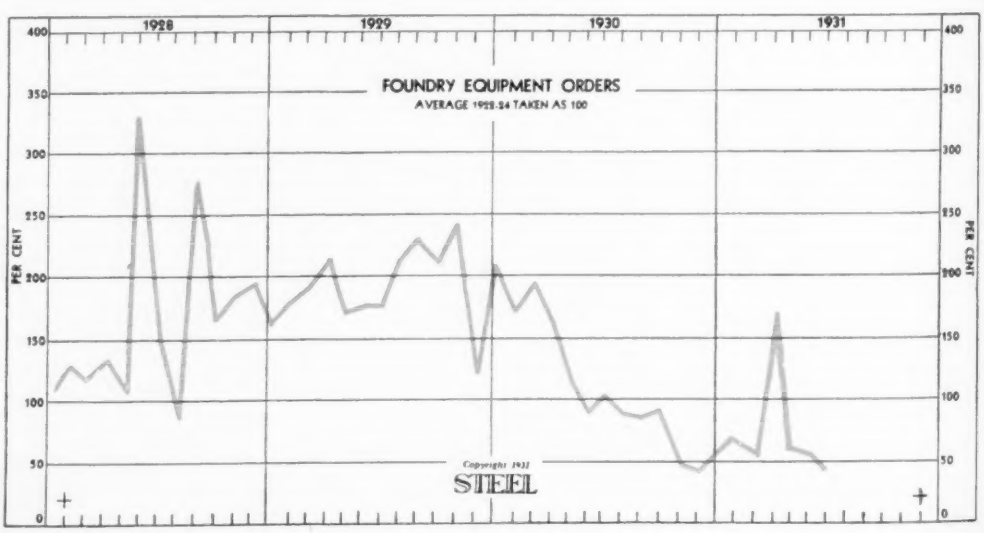
June	109	107
May	109	108
April	108	107

Wages, Materials Hold Steady and Building Costs Are Unchanged

Building costs held unchanged during June, total costs at 92, wage costs at 109 and material costs at 78. Although the wage cost indicator is at its highest and the materials cost index at its lowest, the total cost remains at the lowest point for nearly nine years. The wage index has not indicated a drop since June a year ago, when the figure receded temporarily from 108 to 107. Not since September, 1929, have total costs increased. At that time the index gained a single point to reach 102 before starting a long decline. In 1920-1922 total costs, with a single interruption, dropped for 22 months, from the early summer of 1920 to the spring of 1922, going from 129 to 85.

Orders for Foundry Equipment Drop, Index Again Is Lowest Since 1922

A sharp drop in foundry equipment orders brought the index of the Foundry Equipment Manufacturers association below the low established last November, and to the lowest level since February, 1922. Gross orders in June were 40.9, compared with 54.1 in May and 102.1 a year ago. The three months' moving average of gross orders, down from 95.4 in May to 50.9, was fractionally under the low which occurred last December. June shipments dropped to 90.4 from 118.6 in May, but were the second best of the year to date. As a result, however, unfilled orders were at a new low, 70.1, compared with 123.8 in May and 166.7 a year ago. Two years ago orders were at 177.2.



Per Cent

	1931	1930
June	40.9	102.1
May	54.1	92.7
April	57.7	122.8
March	174.4	164.1
February	54.7	196.4
January	65.3	160.1

BY H. L. BOHM

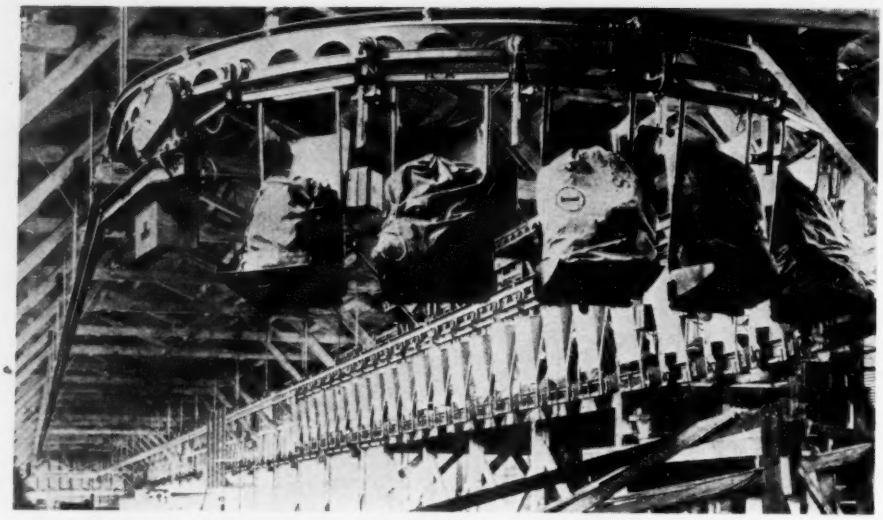
Cleveland Electric Tramrail division of Cleveland Crane & Engineering Co.

Selector station showing operator setting the selector bar according to the destination on the tag attached to the mail bag. The photoelectric tube relay is mounted on this selector bar

Photoelectric Relays and Monorail System Speed Mail Handling

METHODS heretofore in use in mail terminals have required large platforms for sorting mail bags according to destination; large because of the innumerable mail trucks which had to be backed up against the platforms. Wide aisle spaces were necessary for convenience in maneuvering these trucks. In busy periods confusion was natural, with its attendant demands upon labor and equipment. In a certain union terminal project, it is proposed to eliminate these obstacles to operating economy by the use of a monorail conveyor system with speeding trains of carriers dumping mail automatically at predetermined points, in accordance with destination bags. In this system photoelectric tube relays, manufactured by General Electric Co., Schenectady, N. Y., play an important part in discharging mail at the proper car along the railroad siding. The conveyor system has been designed and built by the Cleveland Electric Tramrail division of Cleveland Crane & Engineering Co., Wickliffe, O. Eighty-five per cent of all mail at terminals is handled in mail bags; the other 15 per cent, known as "outsides" and consisting of fragiles, millinery, baby chicks, etc., is handled individually and must under the new plan continue to be so handled. At this terminal 104 assortments of mail are required, which is among the largest distributions of any city in the United States. In place of five large platforms are proposed two mezzanines, built

THE accompanying article describes an interesting photoelectric tube control for a monorail conveyor system designed to handle mail bags in a railroad terminal, and may suggest many other materials handling or industrial operations to which photoelectric control might be applied advantageously. The author, H. L. Bohm, is materials handling engineer, Cleveland Electric Tramrail division of Cleveland Crane & Engineering Co., Wickliffe, O.



General view of the proposed installation as a loaded train of carriers leaves the dispatching platform. Note the selector bar with photoelectric tube relay attached to each carrier

at a height to correspond to that of the carrier, enabling easy loading. These mezzanines are only sufficiently large to give room for workmen and the mail that is dumped there from a belt conveyor through a chute—one chute to each mezzanine. While carriers are in motion the mail is loaded on the trays, station selection is made, the train, when completely loaded, speeding up to 450 feet per minute and dropping the bags at proper cars; thus the mail is taken quickly to its destination without storage or rehandling in the building.

The movement of mail sacks will be practically continuous, avoiding the necessity of large areas for temporary storage. Four men only will be required on each mezzanine as against 12 formerly on each sorting platform, in addition to many men for moving of trucks. Since the monorail method eliminates rehandling, the services of numerous men for shifting and unloading of trucks at car platform also will be unnecessary.

Congestion Is Costly

All types of conveyances operating on the floor, due to congested conditions inherent in the floor operation, only serve to aggravate costly conditions. Mail carriers on rails overhead eliminate this congestion. Furthermore the possibility of injury to workmen or those on the floor is minimized since the carrier is riding out of reach of those on foot and presents no possibility of collision or accidents.

The proposed system will operate about as follows: Each bag of mail will be placed upon a separate carrier—there will be 50 carriers or trays propelled by one electric travel unit moving at a speed of 450 feet per minute, and this train of carriers will operate automatically without manual attention over a loop monorail system. Four of these loops will be installed, with several trains operating on each loop.

As the carriers pass by the railroad cars, all mail destined for Chicago, for example, will be dropped at the car going to Chicago; all mail for Cleveland will be dropped at the car going to Cleveland, regardless of the carrier on which it has been placed. The dumping of these carriers will be accomplished by means of a stationary light adjusted to position at the car door to focus on a photoelectric tube which previously has been set for some particular destination point at the selection or dispatching station. This photoelectric tube, actuating relays and a magnet latch, will trip the carrier at the car for which it has been set.

Accompanying illustrations show a test installation in a building approximately 400 feet long. The installation covers almost the entire length of the building, the train used here consisting of 30 carriers, ten of which are fully equipped with photoelectric tubes, relays and tripping mechanisms, the others being dummies. The entire train is drawn by one standard electric travel unit, moving at 450 feet per minute except at the loading platform where resistance is thrown in the line and the speed of travel cut down by rheostat control to permit the operator to load the carriers as they pass by him. After the entire trainload is past the loading and dispatching station the train automatically picks up to full speed.

Bags Dropped Into Chute

Lower illustration on this page shows the train passing the unloading stations which are built to represent railroad mail cars. Some of the trays have been dropped while others have mail sacks still resting on the trays. In the immediate foreground is one bag just dropping into the chute which throws it or permits it to slide into the car. Immediately behind this first chute is another of the standard chutes with front retainer section raised in such a position as to retain the mail sack in the chute truck instead of permitting it to slide directly into the car.

When a railroad mail car for a particular destination has not been spotted, the mail sack will drop into the chute truck which will be retained in the approximate vicinity of the car location until the car is placed in position. These chute

A train passing unloading stations, built to represent railroad mail cars. In the foreground one of the carriers, through its photoelectric relay, has just discharged a bag into the car chute

trucks will hold approximately 40 sacks of mail.

The detailed method of station selection and carrier dumping will be somewhat as follows: Telescopic focusing light from sources with lamp transformers arranged for vertical and horizontal adjustment of light will be placed at discharge stations. After these light sources once have been set there should be no reason for changing their location, cars being spotted to each light source rather than the light source being changed each time the car is placed. However, they need not remain the same if the operator is provided with the schedule of stations before starting the particular cycle of operation.

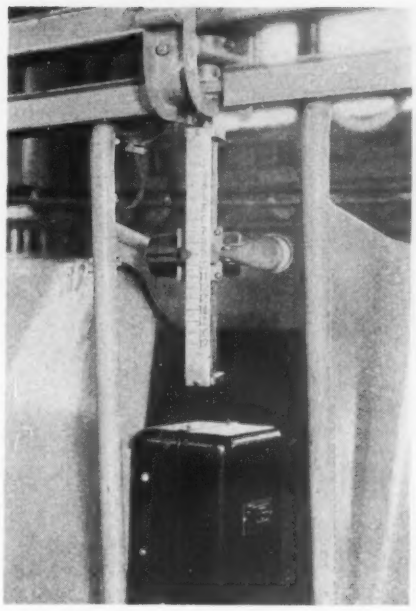
The illustration at the top of Page 31 shows the selector station. In this particular case, the photoelectric tube is mounted on a slide with necessary stops for 17 positions. When the selector bar is turned to the left 17 stop stations are available and when the selector bar is turned to the right 17 more become available. As the carriers pass the dispatcher, he looks at the tag on the mail sack and adjusts the selector arm to the proper station. The speed of the carrier at this point is timed in such a manner as to permit the operator to adjust the selector bar without stopping the train at any time. As the train passes station No. 1, the first carrier being set for station No. 1, the focusing light source throws its beam of light on the photoelectric tube which in turn operates the relay and the tripping mechanism, dumping the sack into the mail chute.

The next carrier may have mail for station No. 16 and as it passes stop No. 16 it, in turn, is dropped into the chute and slides into the railroad car.

Optional Stop Provided

If for any reason the dispatcher or the loaders require more than usual time for either loading or selecting, by means of foot control mechanism they can stop the operation of the particular train which they are loading. This is accomplished without any interference to the travel or operation of any of the other trains which might be on the loop. No necessity should arise for stopping one of these trains at any time. One dispatcher can set the photoelectric tube tripping mechanism as fast as three men can load the carriers, they of course loading them without any regard as to their destination since it is part of the dispatcher's duties to read the destination on the tag attached to the mail sack.

Naturally after all the trays have been tripped and unloaded they must be returned to the loading platform in a closed or horizontal position. This closing is accomplished automatically by the trays sliding over



Closeup of the selector bar showing markings for 17 stations. Photoelectric tube relay equipment also is shown

an ingenious arrangement actuated by the curvature of two pieces of common steel tubing, suspended from a structural frame work as shown in the lower illustration on this page.

Maintenance and service items on equipment of this type are confined to the periodic replacement at intervals of six months to two years of driving wheels, collector wheels and light source bulbs.

New Control To Speed Up Ore Bridge Performance

A new 15-ton ore bridge, to be put into operation this summer at the Edgar Thomson works of the Carnegie Steel Co., Braddock, Pa., has been designed to move 1000 tons of iron ore an hour and to operate continuously 24 hours a day. Built by the Dravo Contracting Co., Pittsburgh, the bridge will have its control, motors and airbrakes supplied by the Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.

In addition to handling ore from cars to storage pile, the bridge with its 15-ton grab bucket will also carry ore from the storage pile to three blast furnaces. Between cars and storage the bucket will take 34,000 pounds of ore at a bite, lift it an average height of 35 feet and move it an average of 90 feet to the storage pile, making one round trip every 54 seconds.

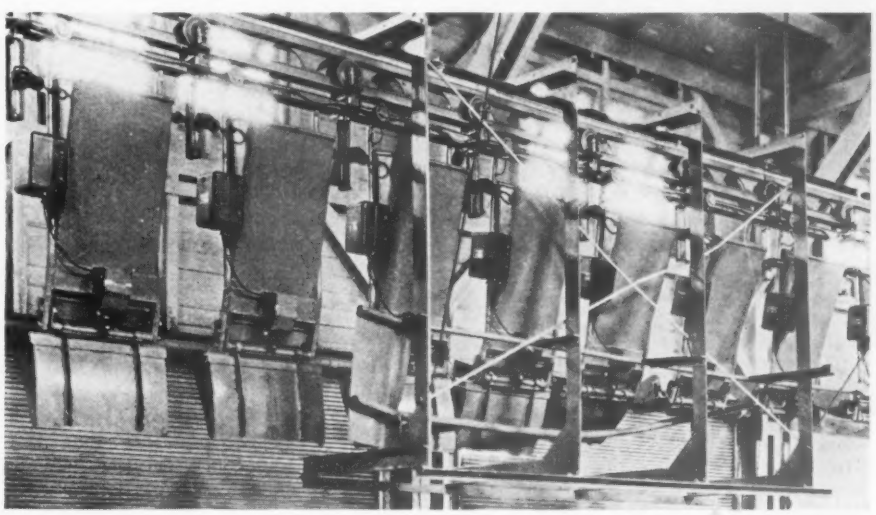
Distance between tracks will be approximately 200 feet, hoisting speed will be 235 feet a minute. The trolley can travel along the bridge at the rate of 800 feet a minute and the bridge will move along the tracks at the rate of 135 feet a minute.

Since a carload of ore contains 50 tons, this quantity can be moved to storage pile in three trips or in approximately 3 minutes. This speed, it is said, is due largely to the faster operation made possible by electro pneumatic contactor type of control.

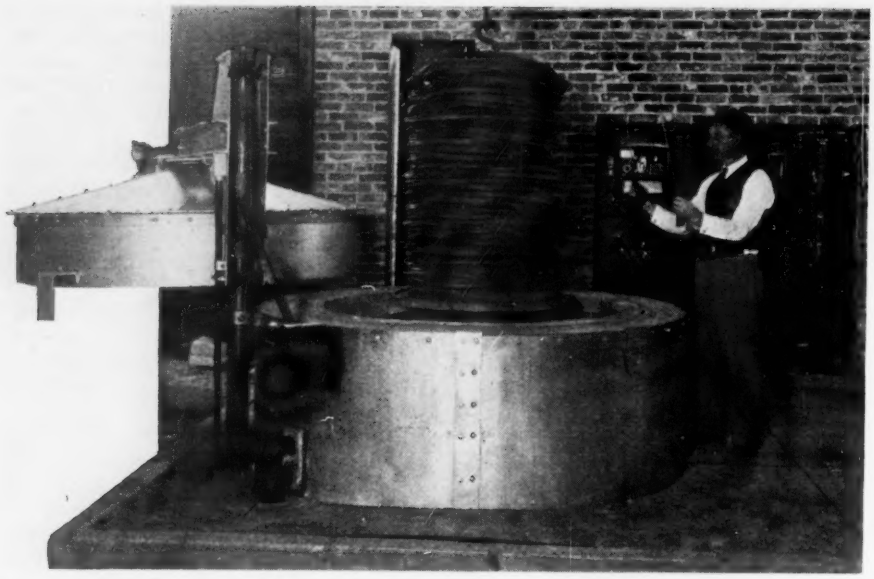
Welders Inspect Plant

Some 160 members of the St. Louis Welding society held their final meeting of the year recently at the plant of the Midwest Piping & Supply Inc. F. C. Fantz, vice president of the company, conducted the party on an inspection trip through the shop.

Of interest to the visitors were 24-inch welded headers of ⅝-inch wall thickness which were tested to destruction at 1750 pounds pressure to study the behavior of the parent metal and weld metal. Also attracting attention was a 135-ton hydraulic welded press built by the company for its own use.



The trays are closed as they slide over this cradle arrangement, before returning the loading platform



Circular pit-type electric furnace which anneals coils of wire rod in a gaseous atmosphere to prevent oxidation and decarburization

Electric Heating Furnaces Find Place in Steel Mills

BY A. H. VAUGHAN

Assistant Chief Engineer, Electric Furnace Co., Salem, O.

ELECTRIC furnaces used in steel mill operations other than melting can be classified in three divisions: Normalizing, annealing, and heat treating. It is somewhat surprising that electric heat should have made the progress which it has in steel plants where so many operations are of necessity carried on in combustion furnaces. However, in the manufacture of alloy steel for exacting service, the electric furnace exhibits some advantages which have been sufficiently impressive to cause some of the leading mills to adopt electric equipment for high grade work.

Electric Normalizing

Electric normalizing is used widely for alloy steel in bar form, employed in making automotive parts. Here normalizing serves the purpose of furnishing the most desirable structure for subsequent heat treating after machining such parts as small gears, pins and shafts. It finds important application in the treatment of steels for ball and roller bearings manufactured in the forms of bars and tubes. Tubes, bars, etc., for structural parts are normalized electrically for the sake of strength. Alloy steels for forging often are normalized for the sole purpose of producing a structure which will permit cold shearing.

Electric annealing furnaces are used for low-temperature treatment of cold-drawn bars and tubes, for the spheroidizing treatment of alloy bearing and gear steels, and for the annealing of wire which is to be cold headed to make steel balls, bolts, and other wire products.

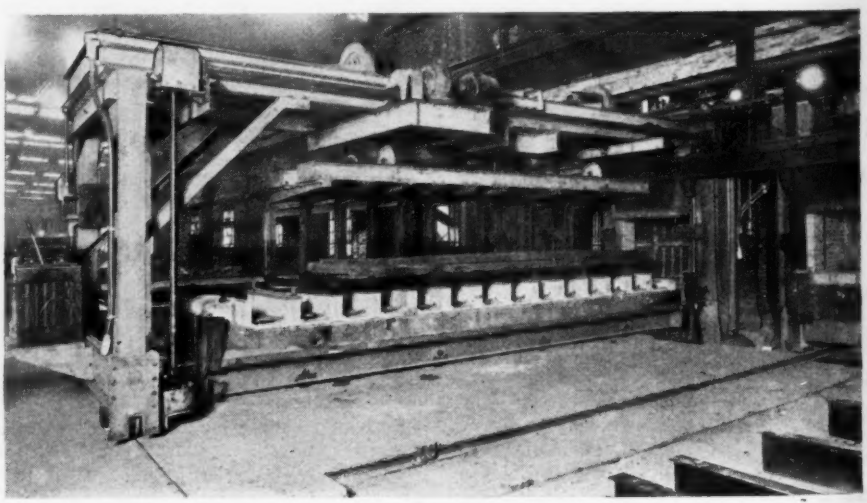
The extent to which electric heat is used in the steel mill is indicated by the fact that the writer alone has been concerned in the design and installation of some 15,000 kilowatts total capacity of steel mill electric furnaces. This includes plants where the connected capacity ranged from 250 to over 6000 kilowatts.

It is not possible to give accurately the production capacity in tons which this 15,000 kilowatts represents but it may be assumed roughly at about 175 tons per month per 100-kilowatt connected load. This leads to the total of over 26,000 tons per month. Some treatments, it is true, involve long cycles, sometimes reaching 72 hours, and while in these cases the average production per unit of connected load is comparatively low, in other cases it runs much higher than the above figure, and it is believed that the total given is fairly accurate.

Electric Heat Treating

Electric heat treating and annealing furnaces for steel mill service necessarily must be built in keeping with the type of design used in mill machinery. This means, first of all, heavy construction and the greatest possible simplicity. It is almost always necessary to provide for the handling of a wide range of sizes and shapes of material. Mechanical apparatus must be made rugged and also usually must be run at fairly high speed. Furnace sizes range from small car-type units with cars 24 inches wide and 15 feet long, up to pit-type annealing furnaces which readily accommodate single charges of 125,000 pounds.

The type of mechanical apparatus used is widely different from that found in the class of the ordinary heat treating equipment. Such apparatus as special cranes for bar and tube handling, roller tables, cooling beds, automatic quenching apparatus and 30-ton cranes for handling pit furnace covers have been installed. Problems arising in the conveying of work through continuous furnaces have led to some interesting and powerful mechanical apparatus, including pushers, charging and ejecting machines; and even the racks and cradles used for



Special single-leg gantry crane loading and quenching machine, built to serve three car-type furnaces; quench tank in rear

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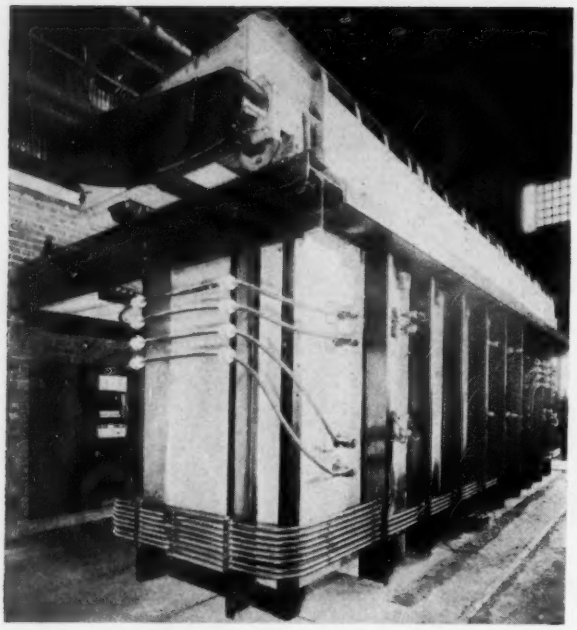


A VERTICAL pit-type electric furnace for annealing alloy steel bars, provided with self-contained motor-operated cover lifting device

batch-type furnaces have required much design work.

For annealing service the most familiar furnace type is, of course, the car bottom unit. It is perhaps the most useful furnace because of its adaptability to a wide range of products and treatments. It is usually the best selection for a plant where it is not practicable to employ single-purpose furnaces. Such furnaces can be built up to unusually large sizes if desired, but they are not usually more than 5 or 6 feet wide and of sufficient length to handle 40-foot bars or tubes. A furnace of these dimensions would be rated between 600 and 900 kilowatts and would have an hourly capacity up to about 4 tons, depending upon the temperature and time cycle.

Nearly all such furnaces are equipped with motor driven car pullers and door hoists and in many cases it is advantageous to use special cranes for handling the work.

Uses Are Numerous

Car-type furnaces handle bars and tubes either in open charges or in annealing boxes, and are used for tubes, alloy steel bars, tool steel, and in fact for nearly all high grade products.

For many classes of annealing the pit-type furnace offers advantages which cannot be had in any other design. It is, first of all, economical in power consumption because of its freedom from air leakage and because of the possibility of applying good heat insulation at all points. For much the same reason, the temperature distribution in pit furnaces is good and consequently such furnaces can be operated at high heating speeds.

Pit-type furnaces are well adapted to the handling of bearing steels in treatments where the time cycle is long and where the uniformity of treatment throughout a charge is important.

An accompanying illustration shows one of a number of circular pit-type units of small size used in the annealing of ball wire coils in enclosed containers where it is essential to avoid surface decarburization. Gas is used in the containers to avoid oxidation and loss of carbon from the surface.

In tube plants a special type of annealing furnace often is used to good advantage for the annealing of cold-drawn tubes as a final operation. This treatment is generally carried on at a low temperature ranging between 800 and 1400 degrees Fahr. Several plants make use of a special box-type furnace equipped with a loading rack which runs in and out of the furnace on rollers. This rack is driven mechanically and the arrangement results in rapid handling, low labor cost and excellent uniformity of heating.

Normalizing, which consists of heating the charge to a temperature of about 1600 degrees Fahr. and cooling rapidly in air, may be, and often is, carried on in car-type furnaces. One installation includes several car-type furnaces in which annealing, normalizing and quenching are carried out as the occasion may demand. These furnaces are equipped with a special traveling crane designed to load whole charges on the cars, remove and lower them into a quenching tank or transfer them to a cooling bed, depending on the treatment which is wanted.

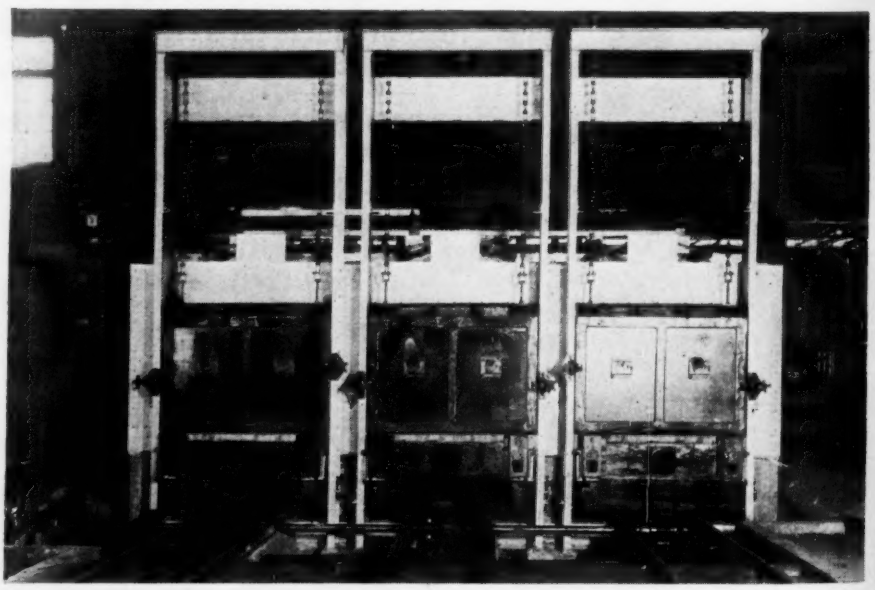
Continuous Furnaces Desirable

However, in cases where a considerable volume of normalizing work must be handled, continuous furnaces are desirable. Such furnaces will handle bars and tubes at a uniform rate, each one being subjected to exactly the same time and temperature conditions. The mechanical construction of continuous normalizing furnaces can be adapted to nearly all classes of bar and tube stock unless the range of sizes is exceptionally wide. These furnaces may be equipped with cooling beds, and if desired with mechanisms which allow the work to be either quenched or cooled in air as necessary.

Electrochemists To Meet

Fall convention of the Electrochemical society will be held Sept. 2-5 at Hotel Utah, Salt Lake City, Utah. A feature of this meeting will be a scientific-technical discussion on "Cyanides in Metallurgy," lead by M. R. Thompson, bureau of standards, Washington.

The spring meeting of the society, the sixty-first convention of the organization, is being arranged for Baltimore, April 21-23. Outstanding in this meeting will be a symposium on "The Operation and Products of the Electric Furnace."



Three electric car-type furnaces used for normalizing and annealing steel bars. Each furnace is provided with motor-operated car moving mechanism

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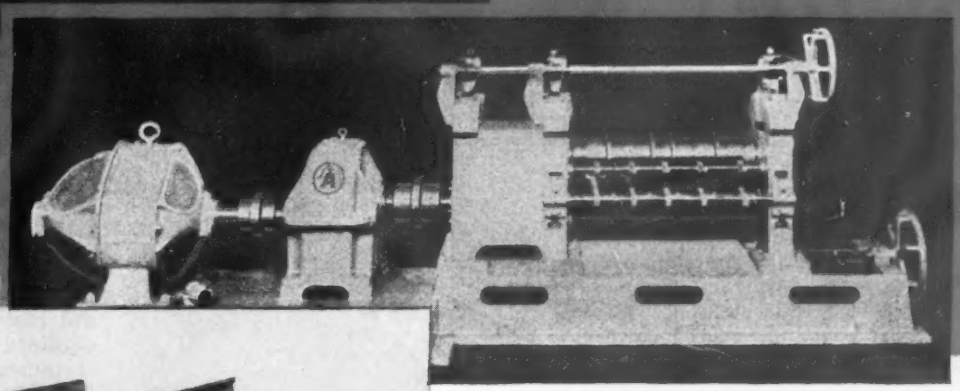
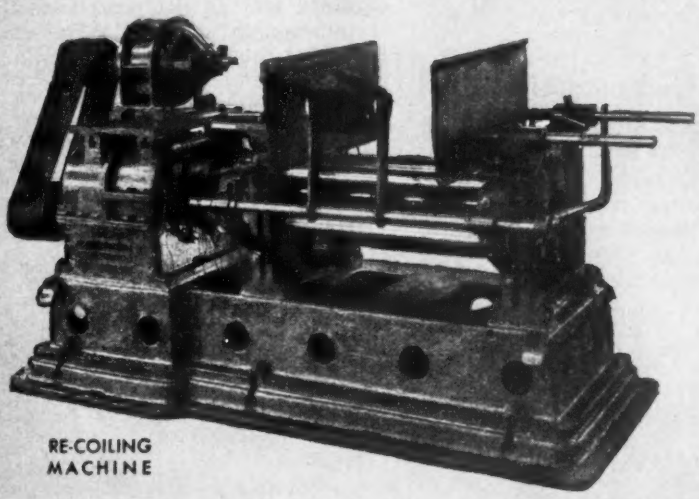


GANG-SLITTER, for all sizes and gauges



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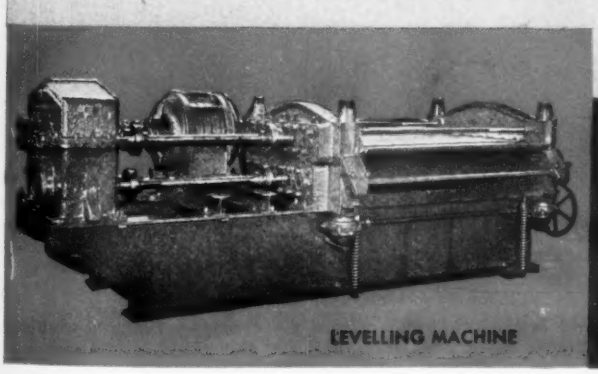

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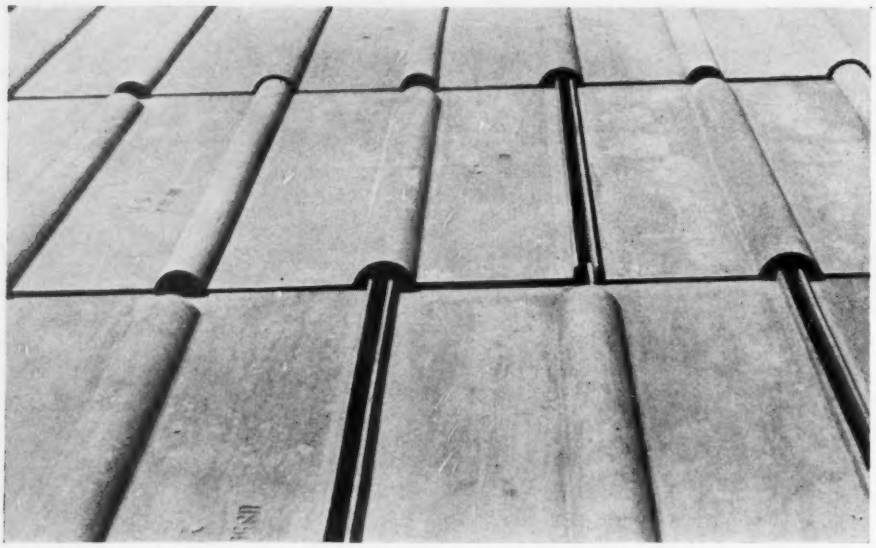


Section of an industrial building roof covered with cast-iron plates since March, 1929. Three cap plates have been removed to show joints

Develops Cast-Iron Roofing For Industrial Buildings

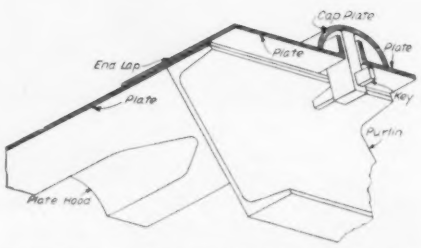
CAST IRON roofing material for industrial buildings has been developed by the United States Pipe & Foundry Co., Burlington, N. J., and now is obtainable for new roof construction and replacement work. While the use of cast iron for roofs is not new, the dome of the national capitol at Washington being entirely of cast iron installed in 1870, the new product has been designed to meet demands of quick and simple installation.

The roof, sketches of which appear in accompanying illustrations, consists of cast iron plates, 2 feet x 4 feet 4 inches in size with 3/16-inch thickness, laid directly on the roof purlins and joined together by cast-iron cap plates which in turn are fastened to the roof purlins by keyed lugs. This arrangement makes the roof a complete interlocked system, integral in itself and integral with the roof trusses to which the purlins are attached.

Resists Atmospheric Corrosion

The cast-iron roof is claimed to be practically immune from the effects of wind, corrosive action of the weather and acid or alkali fumes, and building vibrations set up by cranes, trucks and heavy machinery. The play between the various parts is sufficient to permit temperature expansion and contraction without setting up leaks. No plastic joint compounds are required although they may be used if so desired.

Each plate of the assembled roof



Detail of method of locking standard plate and cap plate to purlin

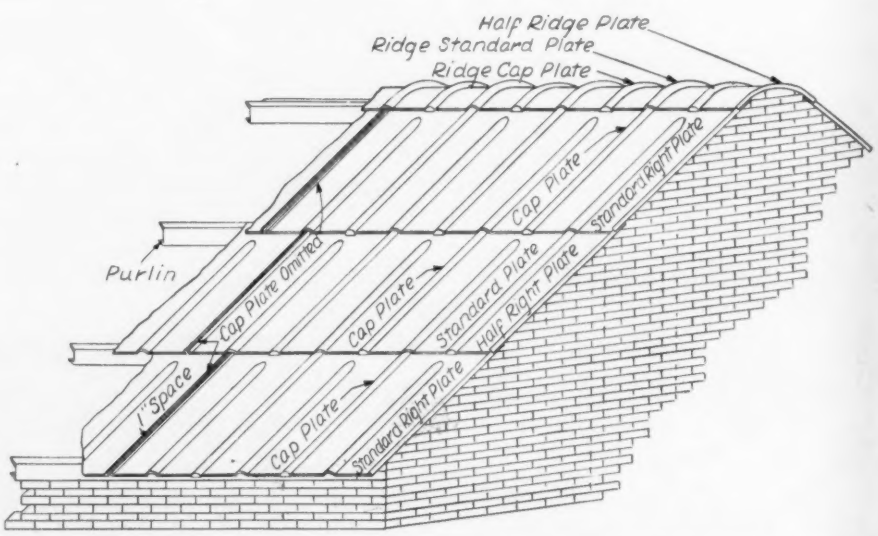
will carry a uniformly distributed load of 400 pounds per square foot over a purlin spacing of 4 feet. The weight is favorable for use on industrial buildings, amounting to 10.8 pounds per square foot. Low cost, long life, minimum maintenance and the inherent value of the material as marketable scrap are other advantageous features.

Attached to Roof Purlins

Assembly is accomplished by laying the required number of plates to make up one course along the eaves. The plates are prevented from slipping by a lug cast on the under surface of the plate, resting against the roof purlins. A gap of about 1 inch is left between the plates. The cap plates then are placed over the joints and the keying lugs pass through the gaps between the plates. As soon as the cap plates are located, they are fastened to the purlins by means of a key, as shown in one of the drawings. Another course of plates then is laid with the joints staggered, and the cap plates on this row set in place, etc. Special curved plates and cap plates for them are furnished for the ridge. It is of passing interest to note that all assembly is done from the outside except for the keying of the last ridge plate, thus minimizing the use of staging and scaffolds.

Standard roof plates and cap plates can be obtained from stock as well as the half-plates necessary to complete the rows of standard width. For roofs of such width as not to require an integral number of standard plates, odd sizes to suit may be obtained and do not complicate the installation in any way. The same is true of roofs having dormers, hips and valleys.

It is thought that this new type of metal roof will be particularly adaptable to installation on mill buildings, since for this use the roof need not be air tight. The high resistance to corrosion which the ma-



Drawing showing method of laying cast-iron plates on common type of sloping roof. Special curved plates have been designed for the ridge, as shown

terial exhibits also suggests use around plants where corrosive fumes of various types may be present. In general, the industrial roofing market is a large one and even the needs for replacement work would account for a considerable tonnage of this new product each year, according to the manufacturer.

Markets Material for Use In Casting Steel Ingots

A new product known as Liquitol, developed in Germany and used extensively in that country and England in connection with the production of iron and steel castings and steel ingots, has been placed on the market by the Alpha-Lux Co. Inc., 192 Front street, New York. This material is applied as a layer on the hot tops of ingots and on the feeder heads in connection with castings.

Use of the material is claimed to reduce the metal in heads and runners by about 50 per cent, eliminate piping in castings and ingots, and eliminate or reduce cavities and porosities. The layer of material is said to keep the metal in fluid state for a longer period, giving it a chance to feed back into the bottom of the ingot or casting. It is pointed out that the material does not affect the analysis or physical properties of the metal.

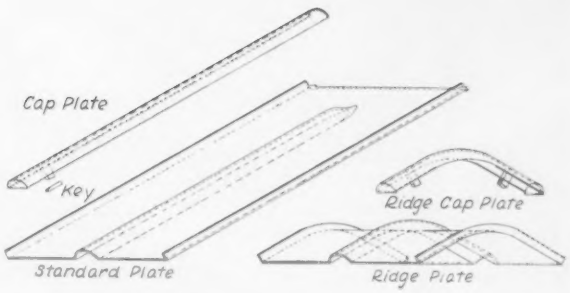
May Assist Libraries To Select Technical Books

Technical library facilities throughout New England are adequate on the whole to meet requirements of engineers, although foreign books and periodicals are decidedly lacking and in many libraries technical literature needs weeding out. These facts are reported by Julian A. Sohon, chief bibliographer, Engineering Societies library, New York, who surveyed public, university and industrial organization libraries in 25 cities and interviewed 46 prominent engineers.

The purpose of the survey was to determine how far the public library meets the requirements of technical literature and to obtain suggestions for extending the work of the Engineering Societies library. Cities visited included Bridgeport, New Haven, Waterbury, Hartford, Springfield, Worcester, Boston and Providence. Practically all libraries had large numbers of out-of-date books on the shelves, largely because of inability of librarians to judge books no longer in demand.

Mr. Sohon reported that librarians suffer from a lack of technically trained assistants and from inability to judge advisability of purchasing certain engineering books. He suggested that the latter might be overcome by the formation of a committee of engineers in each city to consult with the librarian in the selection of books and periodicals.

STANDARD plates employed in making up cast-iron roof. Standard plate size is 2 feet by 4 feet 4 inches, although odd sizes are available



Publishes Standards for Abrasive Grain Sizes

The division of simplified practice, department of commerce, Washington, has published in booklet form simplified practice recommendation R118-30 dealing with abrasive grain sizes. The recommendations were drafted on May 8, 1930, at a general conference of representative manufacturers and users of aluminum oxide and silicon carbide abrasives.

The standards were accepted by the industry and became effective Sept. 1, 1930. In addition to the recommendations, the bulletin contains a list of acceptors and a history of the project. Copies may be obtained from the superintendent of documents, Washington, for 5 cents a copy.

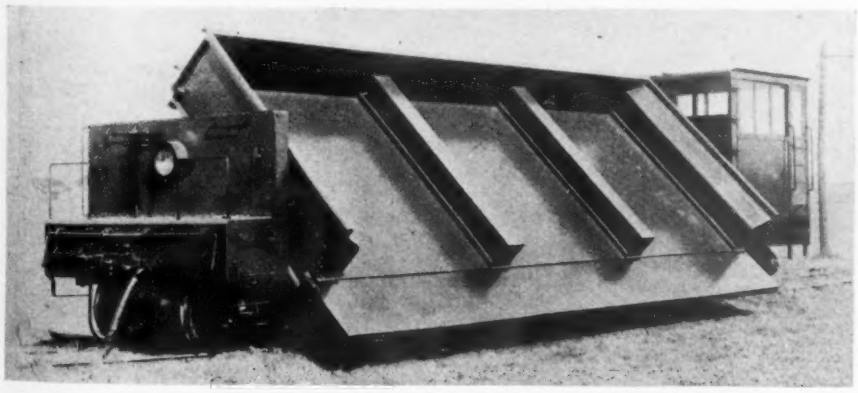
Sound Heat-Resisting Pots Prevent Cyanide Leaks

In its issue of June 18, Page 54, STEEL presented an abstract of an article by R. F. James and Glenn Coley appearing in the June 6 issue of *Electrical World* and dealing with the deterioration of chrome-nickel heating elements in cyanide furnaces. The authors presented four conclusions as a result of their investigation.

Commenting on the first of these conclusions, a manufacturer of heat-resisting alloys disagrees with the statement that cyanide or its components have a deleterious effect upon chrome-nickel alloys. The experience of this manufacturer has been that the products of oxidation of cyanide and cyanide-bearing salts have a deleterious effect and not cyanide itself or its components.

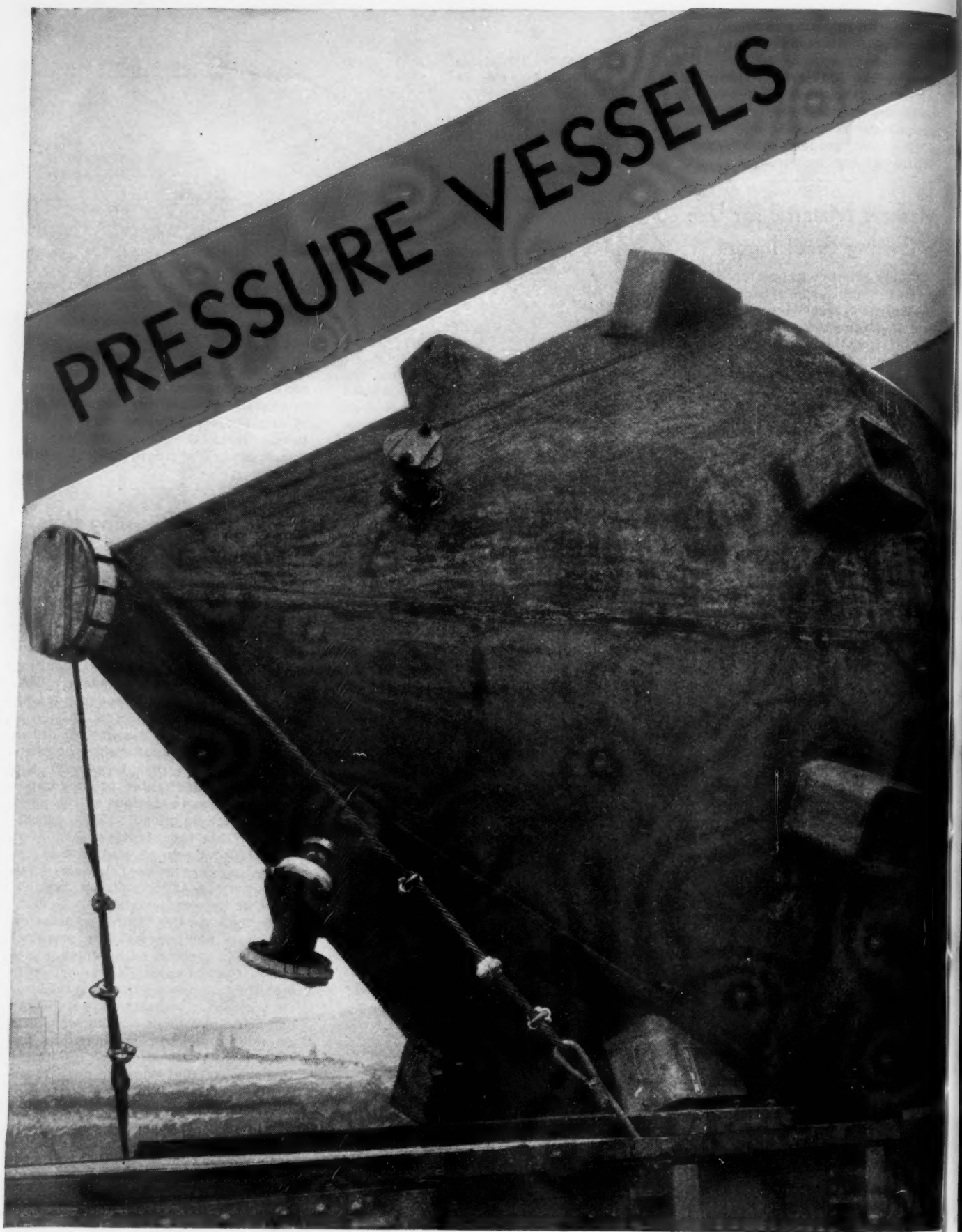
Regarding the third conclusion that it is not economically practical to exclude cyanide or its components from the element chamber, this manufacturer states that several hundred electrically-heated cyanide pots operating in a large number of plants are not subject to this condition. Various means of sealing the top of the furnace so that slopped-over cyanide does not find its way down into the heating chamber have been developed and many of them are satisfactory, he says.

Continuing, he states that the most important requirement for successful operation of an electrically-heated cyanide pot is that the pot be of sound heat-resisting alloy. Using special molding methods and mixtures, this company has been able to cast sound pots free from ordinary defects which have caused early leakage when ordinary methods were employed.



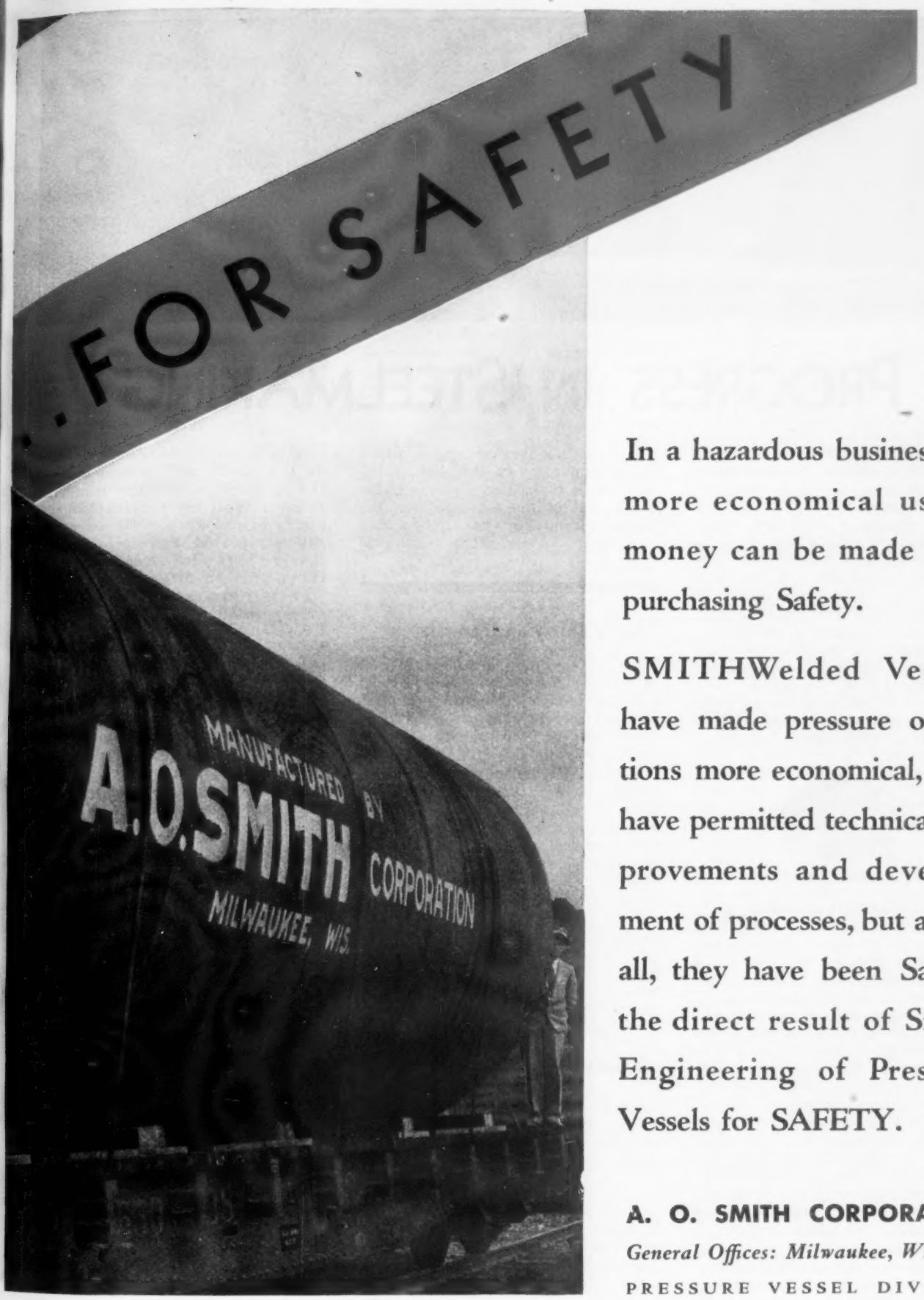
A DEVELOPMENT UNIQUE IN CONCEPTION AND DESIGN

Self-contained gas-electric locomotive dump car intended for service at open-pit mines and quarries, foundries, mills and industrial plants. The unit, which recently was developed by the Differential Steel Car Co., Findlay, O., has a 24-yard level-load dump body and weighs 45 tons light and 80 tons loaded. It is powered by two 150-horsepower Buda gasoline engines and two generators and four motors of the Westinghouse type



SMITH *WELDED*

THERE ARE NOW MORE THAN 1500 IN SERVICE



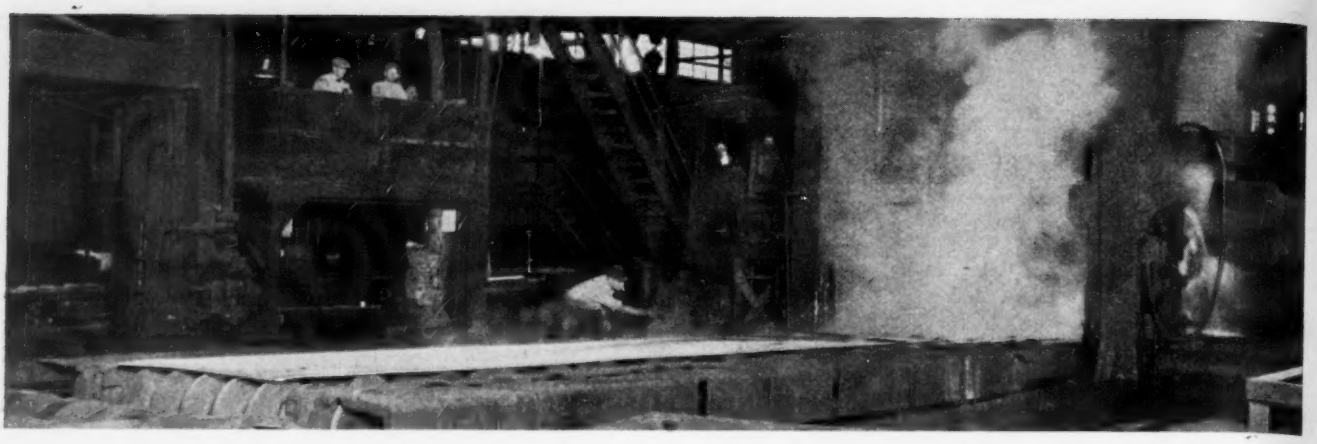
In a hazardous business, no more economical use of money can be made than purchasing Safety.

SMITHWelded Vessels have made pressure operations more economical, they have permitted technical improvements and development of processes, but above all, they have been Safe—the direct result of Smith Engineering of Pressure Vessels for SAFETY.

A. O. SMITH CORPORATION
General Offices: Milwaukee, Wisconsin
PRESSURE VESSEL DIVISION

PRESSURE VESSELS

OPERATING PRESSURES UP TO 5000 POUNDS



PROGRESS IN STEELMAKING

SAYS a steel company chief engineer: "Our improvements most often originate with our customers in mind. We devise, or somebody sells us, something that will enable our plant to produce a superior product and thus give us an advantage with our customers. Or, we have to devise or buy something which will enable us to meet our competitors' inferiority. It isn't just that we want to spend the money. And every time we lay in new equipment, we wonder how soon some fellow is going to come along with a smart idea that is going to give us an obsolescence problem."

IN OPEN-HEARTH operation in the United States there are differences of opinion as to where the responsibility for controlling the supply of gas should be placed. In a number of steelworks the open hearth melter controls the rate of gas delivery by means of a valve on the steam line which drives the blower of the gas producer. This involves a long steam line extending from the charging floor to the gas producer. Exception to this method of control was voiced in discussion at the recent meeting of the American Iron and Steel institute when a speaker declared the control of the producers should be vested in the gas man and that demands for more or less gas should be communicated to him by the furnace tender through electric pushbutton signals. Colored lights or bell signals or a combination of both have proved satisfactory.

♦ ♦ ♦

A mill rolling chrome and chrome-nickel alloy plates and sheets is removing scale by sandblasting, after which pickling reveals defects, which are ground out. In the case of the thin gages, the material warps under the impact of the sand, so that the thin plates and sheets have to be passed through the leveler. It is possible to straighten chrome-nickel sheets by passing them cold through the leveler, but the plain chrome alloy must be heated before leveling.

♦ ♦ ♦

Twin-motor drive for main rolls in heavy mills is the logical development in a field of engineering where heavier sections and higher tonnage rates constantly are being demanded. Twin motors have been installed on a 44-inch slab mill and on a 54-inch blooming mill, and thus far the expectations of the engineers have been more than fulfilled.

When it was first thought desirable to place an independent motor on each main roll, it was believed the principal advantage would be found in the greater mechanical simplicity of the drive. This advantage has been proved in the actual operation of the two twin-motor mills, but in addition unforeseen advantages such as increased flexibility, higher average rolling speed and lower motor inertia have been discovered.

The Vanishing Templates

THREE or four decades ago roll turning was even more of an art than today. Roll turners guarded their secrets with great jealousy. At a mill in New Jersey the roll turner was in the habit of taking his templates home with him each night. At a Pittsburgh mill in the '90's a roll turner was discharged and the next morning it was found that practically all of his templates had disappeared. The gate man was positive that the roll turner had not removed any of them from the plant. During the investigation, one of the engineers recalled having seen the roll turner dump something into the river alongside the plant. Shortly, with the aid of a diver most of the templates were recovered from the river bed.

DISPOSAL of waste material is a problem in any plant but in the nail departments of wire mills it assumes an unusual aspect. In spite of all precautions, nails find their way to the floor and are gathered up by sweepers. The result is a mixture of nails, tacks, brads, staples, etc., of all sizes. The cost of sorting by hand is prohibitive and therefore in many establishments these accumulations from sweepings cannot be disposed of profitably.

Some time ago a certain producer of wire products, who had accumulated more than 100 kegs of mixed nails, tacks, etc., was showing a Japanese visitor through the plant. The gentleman from Nippon noticed the collection, and after a moment's consideration offered $1 a keg for the lot. His bid was accepted without delay. Later it developed that the Jap shipped the material to China where women and boys sorted the nails and other products and packaged them for the retail trade.

Few nailmakers are as fortunate as this one, and it would be interesting to know how many of them dispose of mixed nails.

Scanning the Technology of Steel

A Digest of Important Developments in Scientific Research, Engineering Progress and Operating Procedure Pertaining to the Production, Processing, Application and Performance of Steel

Lure of Alloys

The first of two articles by John Howe Hall, discussing in a general way the difficulties and extra costs involved in the manufacture of alloy steel, The Foundry, July 15, 1931, *p.* 34, 4 *pp.*, 1 *table* .

Many varieties of the newer alloy steels and irons have been introduced to the trade—some good and some mediocre. Fancy trade names backed by high-pressure advertising do not insure satisfactory alloys.

Three classes of alloy steels are suggested by the author: Those suitable primarily for applications requiring extra strength and toughness; those suitable primarily for resisting wear; and those suitable primarily for resisting rust and corrosion from heat or from chemical attack. In each of these classes are grouped steels with high alloy content and steels with low alloy content. Of course this is not a hard and fast classification since some of the alloy steels made could be catalogued in two or possibly all three of these groups.

To keep even reasonably close track of the developments in composition and heat treatment of the hundreds of new alloys being introduced almost daily takes a large part of the time of men already familiar with the subject, and with sufficient technical knowledge to digest and assimilate the vast amount of data being published.

—STEEL, 7-30-31

Continuous Annealing

The annealing of metal strip in the continuous electric furnace, a discussion in The Metal Industry, London, June 26, 1931, *p.* 641, 2½ *pp.*, 4 *illusts.*

A recent development is the "pull-through" type of electric furnace for annealing strip. The strip is uncoiled, fed through the furnace and then recoiled; thus traveling continuously through the heating zone and insuring quick and even annealing, immediate heat transfer to both sides of the strip, most advantageous distribution of heat, minimum consumption of electric current and no necessity for charging devices.

The single chrome-nickel heating elements in the furnace are arranged so that the metal strip, on entering the furnace, is heated almost instantaneously to the desired temperature. Thus only a small fraction of the entire travel of the strip in the furnace is required for bringing the strip to furnace temperature. Special arrangement of the heating elements produces a gradual drop in temperature toward the discharge end of the furnace. Strip up to 40 inches in width can be annealed satisfactorily.

The uncoiling and coiling of strip after annealing necessitates the use of a special drive. The uncoiling gear consists of a drum, the diameter of which may be adjusted, provided with a sensitive brake to avoid any possible lead of the drum. The main feature of the coiling gear is a variable-speed drive through which the speed of a movement of the strip through the furnace can be altered easily and gradually.

—STEEL, 7-30-31

Mechanical Pickling

Description of various types of mechanical pickling machines, by J. C. Weaver, in Metal Progress, July, 1931, *p.* 64, 4½ *pp.*, 5 *illusts.*

Modern mass production methods often require automatic pickling devices which can be placed in straight line with other machinery, thus avoiding much unnecessary handling and labor. Mechanical equipment for this duty has been designed in the form of heavy-duty continuous pickling machines where the immersion time may be controlled correctly and where temperature and agitation of solution can be used to fullest advantage. Now that this operation can be accomplished in the regular manufacturing line, many objections to the use of acid have been overcome, and properly cleaned material may be employed in the various forming operations, thus improving overall production costs.

Many manufacturers have found that a continuous pickling machine placed in the regular production line will reduce cleaning costs by at least half and occasionally costs have been lowered to only 20 per cent of those formerly borne by open-tank equipment. Several types of machines are described and illustrated, including continuous machines, batch-type picklers, monorail with drop section for lowering material into pickling tank, etc.

—STEEL, 7-30-31

Chromium Plating

How to improve the durability of chromium plate, by R. J. Piersol, in Chemical & Metallurgical Engineering, July, 1931, *p.* 386, 4 *pp.*, 4 *illusts.*

The invasion of corrosion-resisting alloy steels into the field of chromium plate has been fortunate for the chromium plating industry, because these alloys form a definite standard of durability which chromium plated articles must maintain. Durability of chromium plate is dependent upon certain factors, including design of the article, selection of the foundation metal, cleaning of the piece, and use of an intermediate plate for rust prevention.

One of the fundamental reasons for lack of durability in many classes of chromium plated articles is the fact that the producer has not realized that his designer must co-operate with an authority in the chromium field. Deficiencies in chromium plated articles are due primarily to the fact that the market developed over night and the product was placed on the market by many companies without any preliminary life tests.

—STEEL, 7-30-31

Foremen and Safety

Responsibilities of foremen in regard to safety, by Vance E. Cribbs, in The Foremen and Industrial Executive, July-August, 1931, *p.* 15, 1½ *pp., no illusts.*

The successful foreman should be able to make intelligent use of safety equipment and appliances; he should train his men constantly with respect to the safe way of doing a job; he should be a persistent observer of personal safety; and he should make a continuous check-up of job practice.

Any safety program to be successful must deal with the fundamentals of good business. Considered in that light, safety in foremanship ranks equally in importance with production, quality, or costs in foremanship responsibilities.

—STEEL, 7-30-31

Machine Tools and Plant Equipment

«Without machine tools modern machinery could not be built.»
—Joseph W. Roe

Sensitive Electrical Gage Is a Rapid Comparator

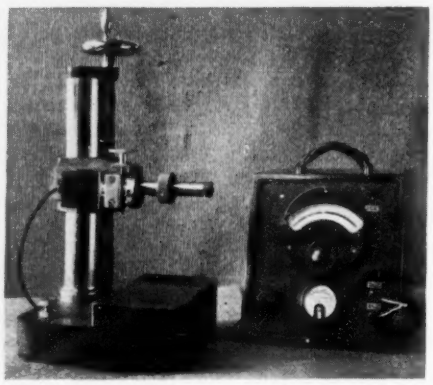
Pratt & Whitney Co., Hartford, Conn., announces a new electric limit gage, which was developed in collaboration with General Electric Co., by whom the electrical parts are manufactured. This gage, together with its accessory electrical instrument case, is shown in the accompanying illustration.

The outfit constitutes an extremely sensitive and accurate comparator, suitable for use in checking work within close limits. On account of the rapidity and simplicity of its operation, it is well adapted to general shop use in connection with quantity production. Heretofore, gages of this kind have been confined almost exclusively to the laboratory.

Electrical Magnification

Essentially the outfit consists of a small gaging head carrying a pointer which contacts with the work. Movement of this pointer alters the balance of an electric circuit and as a result, deviations from exact size are indicated by the movement of a needle on the 5-inch scale of an indicating instrument. Electrical magnification ranging from 500 to 10,000 is possible.

The gage is available both for internal and for external work, it can be set up quickly, and once set up the actual gaging operation does not call for a skilled toolmaker, no sense of "feel" being involved. In addition to its use in connection with production lines, it is being applied profitably to the classification of finished parts into groups on a 0.0001-inch limit basis. The maker points out that this plan eliminates much rehandling as well as hand fitting.



Pratt & Whitney limit gage employs electrical measuring system

◆

Horizontal Boring Machine Also Drills and Mills

Joseph T. Ryerson & Son Inc., Sixteenth and Rockwell streets, Chicago has developed, in conjunction with the Ohio Machine Tool Co., Kenton, O., a special type of horizontal boring, drilling and milling machine. This machine, said to be one of the largest of its kind ever built, is shown in the accompanying illustration.

The bed, which is a heavy box shaped casting, has three ways of generous width and contains chip chutes and the coolant system—including the pumping unit. The main support also is a heavy internally-ribbed, box casting and is held to the bed by dowels and bolts. This support has two straight and two tapered sides and in its portion of the base is a gear box of the three speed driving mechanism operated from the head. Within the column is the counter weight for the head, this being supported by two cables running over roller bearing pulleys.

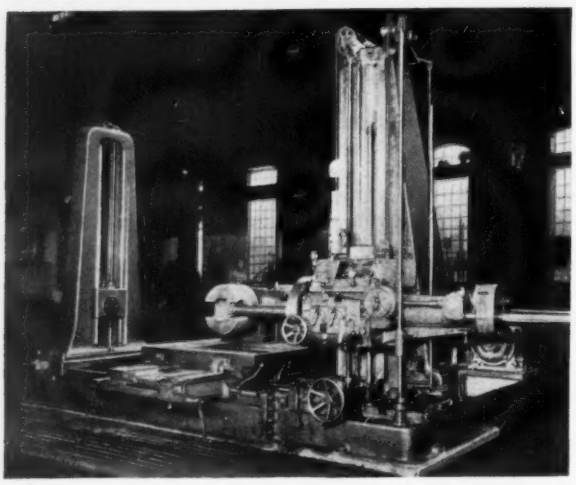
The head contains spindle feeding and driving mechanism, and with the exception of directional control of table and saddle, all controls may be operated from the head. This includes control of the reversible driving motor, which also can be operated from the floor. Final drive to the spindle is through an internally gear driven face plate of large diameter which delivers maximum power to the boring bar.

The boring bar support is of closed type with an adjustment to the feeding nut. The outboard bearing travels in relation to the main head, being driven through special cut bevel gears and helical tooth spur gears so that little or no lost motion exists. The outboard unit, which can be removed entirely from the base, is traversed on the bed by a gear reduction meshing with racks bolted to each side of the bed. At its center is narrow guide fitted with taper gibs.

Generous Bearing on Saddle

Table and saddle are of deep box section and at no time does the table have less than 60 per cent bearing on the saddle. The saddle is aligned by a narrow guide located at the center of the 54-inch bed. The feed screw is directly under the center of the spindle at all times.

The size of the machine is indicated by its weight of approximately 60,000 pounds. It has a 5-inch diameter spindle with continuous feed of 36 inches and reset of 40 inches. Working surface of the table is 60 x



BORING, drilling and milling machine of large size, developed by Joseph T. Ryerson & Son Inc. in conjunction with Ohio Machine Tool Co. Rugged construction and convenient control are featured

96 inches and it has 94 inch cross feed. Eight boring and drilling feeds and sixteen milling feeds to head, table and saddle—all reversible—are available. The machine has eighteen speeds. It is driven through a silent chain to a primary drive shaft by a 20-horsepower constant speed reversible motor.

◆

Carbon Circuit Breaker Is An Unusually Large Unit

Westinghouse Electric & Mfg. Co. completed recently one of the largest carbon circuit breakers ever made. This is shown in the accompanying illustration.

The mechanism is solenoid operated, the core of the solenoid being 7 inches in diameter and capable of exerting a direct pull of over 3½ tons. The complete solenoid mechanism weighs approximately 500 pounds, the coil alone weighing 200 pounds.

The breaker is made up in three sections, each one of which has a direct current continuous carrying capacity of 16,000 amperes. With all sections operating in parallel, the breaker has an approximate direct current rating of 48,000 amperes. The breaker has an interrupting capacity of 105,000 amperes per section at 600 volts.

There are four brushes per section and each brush requires about 1000 pounds pressure to compress it properly. Therefore the total compressive force required directly at the backs of the 12 brushes exceeds 6 tons.

◆

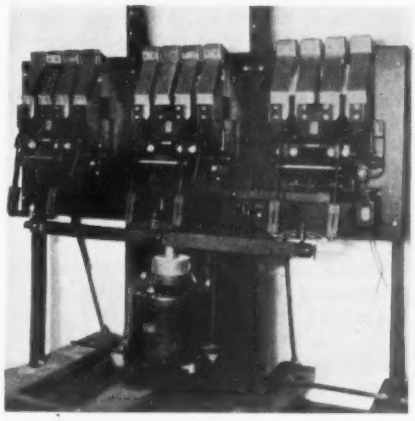
Safety Tongs Designed for Transporting Cylinders

Pulaski Engineering Works Inc., Pulaski, Va., has put on the market the Burnham safety tongs for lifting and carrying tanks of oxygen, acetylene and other compressed gases, as well as sections of pipe used in oil and gas lines, etc. A clear idea is given of the action of the tongs in the accompanying illustration, in which one pair is shown in open position, another in closed—or carrying—position.

Working on the familiar principal of ice tongs, the prongs will dig under a heavy cylinder even though it be resting on soft ground, and as lifting force is exerted upon the handles the grip of the prongs increases in proportion to the degree of lifting force demanded.

A longitudinal hook attached to the center of one pair of tongs (which should be the lower pair when ascending stairs or inclines) prevents the cylinder being carried from slipping endwise. Rectangular eyes above the joints of the tongs provide for attachment of ropes or chain falls for hoisting.

Two sizes are furnished, one for cylinders 9 inches in diameter, the other for cylinders 12 inches in diameter.



Westinghouse carbon circuit breaker having 48,000 ampere rating

◆

New High Carbon Electrode Builds up Worn Steel

Lincoln Electric Co., Coit road and Kirby avenue, Cleveland, has developed a new electrode for use in building up rails, locomotive tire flanges, car wheels, oil well drill bits, tractor shoes, dipper teeth, dies and other steel surfaces which are subject to heavy wear and abrasion.

This new electrode contains about 1.00 per cent carbon and the metal deposited by it has a tough, dense surface of moderate hardness which resists wear and abrasion. When deposited upon straight high carbon steel and allowed to cool naturally the renewed surface will indicate 30 to 45 Rockwell C, 40 to 61 scleroscope and 290 to 425 brinell. A still harder surface may be built up if the bead is peened and higher Rockwell C may be obtained by quenching the deposit with cold water

Special coating on the electrode is said to eliminate objectionable "wildness" of the arc, as well as boiling and resulting porosity. Reversed polarity should be employed, that is the electrode should be used on the positive side of the generator. Low arc voltage, 20 to 25 volts, will give the best results. While range of current values is wide and can be adjusted to suit the work, 150 to 225 amperes is recommended with 3/16-inch electrode, and 225 to 350 amperes with ¼-inch electrode.

The new electrode, which is packed in 25-pound tin containers, is made in diameters of 5/32, 3/16 and ¼-inch, in 14-inch lengths.

◆

Fine Measurement Possible By Micrometer Microscope

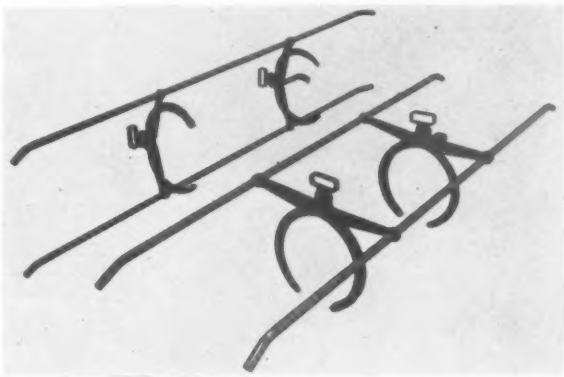
R. Y. Ferner Co., Investment building, Washington, has put on the market a new micrometer microscope developed by Societe Genevoise d'Instruments de Physique, Geneva, Switzerland. One of these instruments appears in the accompanying illustration.

The cast iron stand shown is of rigid construction, designed for convenience in checking small manufactured parts. Its table is 2¾ inches in diameter, the working distance from center of table to edge of supporting arm being 3 7/16 inches.

The micrometer mechanism has a heat treated steel screw cut to a high degree of precision, then lapped into its bronze nut. Its thrust bearing is a sapphire which is ground optically flat to eliminate periodic error, and end play is avoided by a spring device.

The drum of the micrometer is of white material, the matt surface of which makes graduations easy to read. This is graduated on a circular dividing machine to a degree making possible accurate estimates to 0.000005 inch or 0.0001 millimeter. Sensitive setting is accomplished by means of a

BURNHAM safety tongs made by Pulaski Engineering Works Inc. Device enables two men readily to pick up and carry heavy cylinders of oxygen, acetylene, etc.



Micrometer microscope introduced in United States by R. Y. Ferner Co.

large knurled barrel. A glass turn counter in the field of the eyepiece is so graduated that to obtain a complete reading it is necessary merely to set down successively the numbers indicated on turn counter and micrometer head.

The eyepiece is on a small carriage which slides to the top of the micrometer box under rack and pinion action. This allows placing of the eyepiece over the center of that part of the field in which the measurements are to be made, thereby eliminating distortion. Focusing is by rotation of the ocular.

The microscope tube just below the micrometer box is fitted with a collar cut to length to insure exact screw value either of 0.005 inch or 0.1 millimeter per revolution. This makes it possible to dismantle the microscope without losing the original calibration. Below this is a fine thread focusing ring by which the whole microscope can be raised and lowered in its support, then locked at the proper point.

A prismatic illuminating device is built into the microscope just above the objective, light being furnished by a miniature Osram lamp of 4.5 volts in front of which is a green monochromatic filter. Objectives are designed especially for metrological use, having large numerical aperture with high resolving power.

Microscopes can be furnished with total magnification of 41.5, 63 and 96 diameters, the last enabling accurate estimates to be made to a millionth of an inch in comparing working standards with official reference bars, etc. The lower powered instrument is recommended for checking profiles of small gears or screw threads. for measuring fine wires, diamond dies, etc.

◆

Variable Diameter Pulley Gives Speed Changes

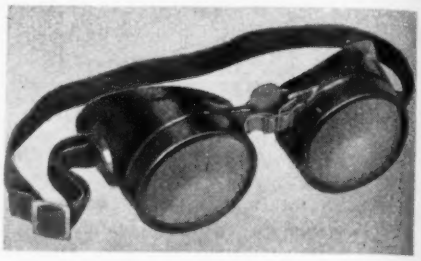
Reeves Pulley Co., Columbus, Ind., has put on the market a new and simplified form of variable speed unit in the form of a special V-belt pulley which is mounted directly on the motor shaft. This unit and its application is shown clearly in the accompanying illustration.

This special pulley consists of two opposing cone faced disks, one fixed and the other sliding, these being pressed together by an adjustable compression spring. The motor on which this device is installed is mounted on a special sliding base on which it can be moved forward or backward by means of a convenient handwheel.

When the motor stands at its nearest point to the driven shaft, the special rubber V-belt automatically rises to the largest diameter of the variable pulley, maximum speed thereby being given to the driven pulley. As the motor is moved away from the driven shaft by turning the handwheel, the tightening V-belt gradually forces the disks apart, the sliding disk moving laterally outward against the pressure of the spring. Thus the speed of the driven pulley gradually can be reduced to the minimum.

This variable speed motor pulley is built in six sizes to fit both alternating and direct current motors from ⅛ to 7½ horsepower inclusive. The illustration shows the design of the units ranging from 1 to 7½ horsepower capacity. Many successful applications of these units have been made, including drives to milling machines, woodworking machines, printing presses and wrapping machines.

REEVES variable diameter motor pulley which automatically changes speed of driven shaft as motor is moved on special sliding base by turning convenient hand wheel



Safety goggles for welders developed by Linde Air Products Co.

◆

New Welders' Goggles Are Adjustable for Fit

Linde Air Products Co., 30 East Forty-second street, New York, recently has introduced a new type of welders' goggles, a pair of which is shown in the accompanying illustration. Comfort to the wearer is said to be assured by the design of the goggles which are made to fit the eyes and are adjustable to conform to the individual nose. The edge of the cup coming into contact with the face is shaped to conform to the general contour of the wearer's cheekbone and nose. The eyepieces are joined with a leather strap, adjustable by means of a metal buckle, so that they may be spaced correctly to the width of the face.

Ventilation ports, provided on each side of the eyecups, are constructed so that it is imposible for sparks or light to reach the inside of the cup. The depth of the cup permits circulation of cool air. The field of vision has been increased by the use of 50-millimeter diameter lenses instead of the usual 47-millimeter diameter. Lenses in brown and three different shades of green are available, being interchangeable simply by removing the metal cups which are threaded on to the frames of the eyepieces. The goggles are of a molded plastic substance formed on fabric base and are claimed to be resistant to heat, light and electric current.

Operations Up, First Since March

Advance 2 Points to 32 Per Cent—Automotive Requirements Shrink, Structural Demands Hold—Steelmakers See Quiet Month Ahead—Prices Steady

STEELMAKERS can see nothing in the sky—or in business immediately in prospect—justifying high hopes for August, except as improvement in some lines may develop the latter part of the month as a step toward larger fall requirements. A moderate upturn in steelmaking operations this week is a favorable indication, sporadic though it may prove to be; but automotive production is scheduled for rather sharp curtailment in the coming month; line pipe orders are falling, and railroads are buying only absolute essentials. Structural requirements for the present are the most cheering feature of the market.

An increase of 2 points to 32 per cent this week in steelmaking operations is the first definite gain in the rate since late in March. The Youngstown district is up 8 points to 42 per cent, though there is some uncertainty in regard to maintaining this level through the week; Cleveland also has advanced 8 points to 35 per cent; Buffalo is up 7 points to 50 per cent. Eastern Pennsylvania is down fractionally to 33 per cent; Pittsburgh is unchanged at 31 per cent, Chicago at 29 per cent, and Birmingham at 35 per cent.

August is expected to mark a new low point of the year in automotive production, and to terminate a five-months decline. July output of approximately 200,000 cars and trucks failed to meet the June total by about 50,000 units. Ford has closed its Dearborn, Mich., plant for the coming month; Dodge and Studebaker are retooling in preparation for new models.

Topped by an order for 10,200 tons for the Bankers' Trust building, New York, structural steel awards this week approximate 38,000 tons, compared with 24,647 tons a week ago. New inquiry has dropped to 55,599 tons. Nearly 200,000 tons has been removed from the potential market by litigation over the Chicago subway. Ten thousand tons of pipe is pending for the New York west side elevated highway.

Producers express more satisfaction over the price position than over business, as regards buyers' attitude. Apparently there is less pressure for lower levels. Sheet and strip makers are beginning to believe they will be able to hold the new quotations. Shipments under the former classification and price bases are due to end July 31, but a real test is not anticipated until September. The situation in wire products is one of watchful waiting. The recent announcement of a price increase was accompanied by contracts dated a week earlier and bearing the former figures, so many buyers will not pay the new prices this quarter. Wire producers hope the increase in sheets will be successful and aid sentimentally in effecting the wire advance for fourth quarter contracts. Sheet bars are being shaded $1 a ton in northern Ohio.

Scrap prices are holding firmly, and some further advances are noted, strengthening the impression that the prolonged downward movement has been definitely checked. The market is more active; 4000 tons of cast borings are being shipped from East Chicago to Buffalo, the first movement eastward by water from that district. July pig iron sales have fallen below those of June; August business is expected to improve as melters, and especially automotive foundries, prepare for September.

The precarious existence of the European steel entente has been extended tentatively one more month, member companies meeting in Brussels being unable to consider terms for the future, STEEL's correspondent cables, because of the critical situation in Germany.

STEEL's composite for finished steel this week is up 20 cents to $48.72, due mainly to adjustments in wire nail prices; the composite for iron and steel products is up 8 cents to $31.06, while that for steelworks scrap remains at $8.87.

Composite Market Averages

	This Week (July 29)	Last Week (July 22)	One Month Ago (June, 1931)	Three Months Ago (April, 1931)	One Year Ago (July, 1930)	Ten Years Ago (July, 1921)
Iron and steel Composite	$31.06	$30.98	$31.02	$31.59	$33.21	$38.14
Finished Steel Composite	48.72	48.52	48.60	49.22	51.90	60.54
Steelworks Scrap Composite	8.87	8.87	8.84	10.12	12.58	9.94

Iron and Steel Composite:—Pig iron, billets, slabs, sheet bars, wire rods, pipe, tin plate, nails, sheets, plates, shapes, bars. **Finished Steel Composite:**—Plates, shapes, bars, sheets, hot strip, nails, wire, tin plate, pipe. **Steelworks Scrap Composite:**—Melting steel, compressed sheets.

Comparative Prices of Iron, Steel and Coke

Representative Market Figures for This Week, Last Month, Three Months and One Year Ago

	July 29, 1931	June, 1931	April, 1931	July, 1930
PIG IRON				
Bessemer, del. Pittsburgh	$18.26	18.26	18.26	20.46
Basic, valley	17.00	17.00	17.00	18.20
Basic, eastern del. eastern Pa.	16.75	17.00	17.25	18.00
No. 2 foundry, del. Pittsburgh	18.26	18.26	18.26	19.46
No. 2 foundry, Chicago	17.50	17.50	17.50	17.90
*Southern No. 2, Birmingham	12.00	12.00	13.00	14.00
**No. 2X, Virginia furnace	18.25	18.25	18.25	18.25
**No. 2X, Eastern del., Phila.	17.76	17.76	18.26	20.26
Malleable, valley	17.00	17.00	17.00	18.70
Malleable, Chicago	17.50	17.50	17.50	17.90
Lake Superior, charcoal, del. Chi.	27.04	27.04	27.04	27.04
Gray forge, del. Pittsburgh	17.63	17.63	17.63	18.83
Ferromanganese, del. Pittsburgh	89.79	89.79	89.79	103.79

*1.75 to 2.25 silicon. For local delivery. Northern shipments based on $11, Birmingham. **2.25 to 2.75 silicon.

COKE				
Connellsville furnace, ovens	2.40	2.40	2.50	2.50
Connellsville foundry, ovens	3.25	3.25	3.25	3.50
SEMIFINISHED MATERIAL				
Shee bars, open-hearth, Youngs.	29.00	29.00	30.00	31.00
Sheet bars, open-hearth, Pitts.	29.00	29.00	30.00	31.00
Billets, open-hearth, Pittsburgh	29.00	29.00	30.00	31.00
Wire rods, Pittsburgh	35.00	35.00	36.00	36.00

	July 29, 1931	June, 1931	April, 1931	July, 1930
FINISHED MATERIAL				
Steel bars, Pittsburgh	1.60	1.65	1.65	1.70
Steel bars, Chicago	1.70	1.70	1.80	1.80
Steel bars, Philadelphia	1.89	1.94	1.96	1.94
Iron bars, Chicago	1.70	1.70	1.80	1.90
Shapes, Pittsburgh	1.60	1.65	1.65	1.65
Shapes, Philadelphia	1.76	1.76	1.78	1.66
Shapes, Chicago	1.70	1.70	1.80	1.75
Tank plates, Pittsburgh	1.60	1.65	1.65	1.65
Tank plates, Philadelphia	1.80½	1.85½	1.85½	1.85½
Tank plates, Chicago	1.70	1.70	1.80	1.75
Sheets, No. 10 blue anneal., Pitts.	1.85	1.85	1.85	2.00
†Sheets, No. 24, hot, ann., Pitts.	2.40	2.15	2.25	2.55
Sheets, No. 24, galvan., Pitts.	2.90	2.80	2.85	3.15
Sheets, No. 10 blue anneal., Chi.	2.00	2.00	2.05	2.15
†Sheets, No. 24, hot, ann., Chi.	2.55	2.40	2.45	2.70
Sheets, No. 24 galvan., Chi.	3.00	2.95	3.00	3.35
Plain wire, Pittsburgh	2.20	2.20	2.20	2.30
Wire nails, Pittsburgh	1.90	1.80	1.90	2.10
Tin plate, per base box, Pitts.	5.00	5.00	5.00	5.25

†Comparisons are with old classification No. 24 black sheets.

SCRAP				
Heavy melting steel, Pitts.	10.75	10.30	12.50	14.90
Heavy melting steel, eastern Pa.	8.75	8.75	10.00	12.50
Heavy melting steel, Chicago	8.50	8.50	9.60	12.00
No. 1 wrought, eastern Pa.	10.00	10.00	11.00	14.25
No. 1 wrought, Chicago	8.25	8.25	8.80	11.25
Rails for rolling, Chicago	10.50	10.90	11.85	14.50

Sheets

Shipments on Old Contracts Terminate This Week—Business at New Prices Is Light

SHEET PRICES, PAGE 53

Pittsburgh—New sheet business is light but shipments against orders placed in closing out old contracts are being completed and an increase in new buying is looked for shortly. On what business is being received producers are adhering to the higher prices announced for this quarter and although the market has been provided little test new quotations so far are well maintained. Orders are on the basis of 2.40c, Pittsburgh, for hot-rolled annealed sheets, 2.90c for galvanized, 1.85c for blue annealed and 3.10c for autobody. Operations are lower, averaging slightly above 35 per cent.

Philadelphia—Despite a sluggish demand sheet prices are steady. Few sellers expect a test of prices before September.

Youngstown, O.—Common black and galvanized sheets are being purchased sparingly and for quick shipment. Autobody sheets are being specified by partsmakers somewhat more liberally. July 31 is the "deadline" for deliveries of sheets under the old classifications. Sufficient specifications have been received under the new rules to insure continued rates of operations at these mills at least as good as in July. However, it is admitted that for common sheets there does not appear to be any more improvement in prospects for the early part of August than for the final week in July. The turning point now in minds of most valley sheetmakers is Labor day, Sept. 1.

Cleveland—There continues to be little volume in the sheet market to test new prices, yet shipping instructions from customers generally are prompt and mill backlogs of tonnage awaiting rolling are at low ebb. Concessions at an eastern point of $1 a ton on No. 24 hot-rolled stock below the 2.40c, Pittsburgh base, are without foundation in actual sales here. Consuming interests hold steadily to the new schedule on small fill in specifications. Enameling stock is moving at a fair rate, a large maker of electrical refrigerators nearby taking material in better volume than a year ago at this time. National Cash Register Co., Dayton, O., is closing manufacturing activities for two weeks beginning Aug. 1.

Chicago—Contract buying of sheets has not been of sufficient volume to test the new third quarter prices, although reports here indicate that buyers are not getting concessions. The volume of orders again has dropped off but sheet mill operations still are relatively higher than any other finished line. The operating rate this week is about 40 per cent, as compared with 50 per cent a week ago. Sales of galvanized have been made at 3.00c, mills, for No. 24 gage. Mail orders were light the first of the week. Late summer roofing business in the Southwest apparently will not be up to expectations of a few weeks ago.

Cincinnati—Production schedules of sheet mills are being held at about 40 per cent. New business is light but represents wide demand.

St. Louis—Sheet specifications in some quarters have picked up moderately, while elsewhere the volume is disappointing. Galvanized sheets are moving in slightly better volume.

Birmingham, Ala.—Sheet mills of the Tennessee Coal, Iron & Railroad Co. and the Gulf States Steel Co. are operating silghtly above 50 per cent.

Gun Forgings Are Let

Washington—National Forge & Ordnance Co., Ervine, Pa., has been awarded 30 sets of 5-inch gun forgings by the bureau of ordnance, navy department. Erie Forge Co., Erie, Pa., booked 12 sets of 8-inch forgings, and Midvale Co., Philadelphia, 12 sets, 8-inch.

Current Finished Steel Prices

Prices in cents per pound unless otherwise stated

Steel Sheets

HOT ROLLED No. 10

Pittsburgh base	1.70c
Gary, Ind. Harbor, base	1.80c
Chicago, del.	1.85c
Philadelphia, del.	1.99c
Birmingham, base	1.85c
St. Louis, del.	2.60½c

BLUE ANNEALED No. 9-10

Pittsburgh, base	1.85c
Chicago, district mills	1.95c
Chicago, delivered	2.00c
Philadelphia, del.	2.14c
St. Louis, delivered	2.20½c
Birmingham	2.00c to 2.05c
San Francisco, c.i.f.	2.50c

HOT ROLLED ANNEALED No. 24

Pittsburgh, base	2.40c
Gary, Ind. Harbor, base	2.50c
Chicago, del.	2.55c
Philadelphia, del.	2.69c
Birmingham, base	2.55c
St. Louis, del.	2.75½c

GALVANIZED No. 24

Pittsburgh, base	2.90c
Gary, Ind. Harbor, base	3.00c
Chicago, del.	3.05c
Philadelphia, base	3.19c
Birmingham, base	3.05c
St. Louis, del.	3.25½c

AUTOMOBILE No. 20

Pittsburgh, base	3.10c

FURNITURE

Pitts., No. 10 heavy	2.75c
Pitts., No. 20 light	3.35c

TIN MILL BLACK No. 28

Pittsburgh, base	2.55c to 2.65c
Gary base	2.65c to 2.75c
St. Louis, del.	2.90½c

HEAVY COLD ROLLED No. 10

Pittsburgh base	2.35c
Gary, Ind. Harbor, base	2.45c
Chicago, del.	2.50c
Philadelphia, del.	2.64c
St. Louis, del.	2.70½c

COLD ROLLED No. 20

Pittsburgh, base	2.95c
Gary, Ind. Harbor, base	3.05c
Chicago, del.	3.10c
Philadelphia, del.	3.24c
St. Louis, del.	3.30½c

Tin and Terne Plate

Prices per 100 pound box Pittsburgh

Tin plate, coke base	$5.00
Gary, Ind., base 10 cents higher.	
Long ternes, 24, unassorted, lb.	3.15c

Wire Products

(To Jobbers-Merchant Trade)

F.o.b. mills, 100 lb. keg

Standard wire nails	$1.90 and 2.00
Cement coated nails	1.90 and 2.00
Galvanized nails	3.90 and 4.00

(Per pound)

Polished staples	2.25c and 2.35c
Galvanized staples	2.50c and 2.60c
Barbed wire, gal.	2.45c and 2.55c
Annealed fence wire	2.25c and 2.35c
Galvanized wire	2.70c and 2.80c

Woven wire fencing, retailers, Pittsburgh-Cleveland, net ton $65.

(To Manufacturing Trade)

Plain wire, 6-9 gage	2.20c
Spring wire	3.20c

Joliet, DeKalb, Waukegan, Ill., Anderson, Ind., Chicago, $1 over Pitts.-Cleve.; Duluth and Worcester, Mass., $2 higher; Fairfield, Ala., $3 higher.

Rivets

Struc. c.l., Pitts.-Cleve.	2.75c
Struc., c.l., Chicago	2.85c
7/16-in. smaller, Pitts.	70, 10 and 5 off
Chi., Cleve.	70 to 70, 10 and 5 off

Steel Plates

Pittsburgh, base	1.60c
Philadelphia, del.	1.80½c to 1.85½c
New York, delivered	1.88c
Boston, delivered	1.98½c
Chicago, base	**1.70c to 1.80c**
Cleveland, base, for railroads	1.65c
Lackawanna, N. Y., base	1.75c to 1.80c
Birmingham, base	1.80c to 1.85c
Coatesville, Pa., base	1.70c
Pacific Coast, c.i.f	2.00c
St. Louis, del.	1.95½c

Structural Shapes

Pittsburgh, base	1.60c
Philadelphia, del.	1.76c
New York, del.	1.85½c
Boston, del.	**1.98½c**
Chicago, base	1.70c to 1.80c
Cleveland, delivered	1.78½c
Lackawanna, N. Y., base	1.75c to 1.80c
Birmingham base	1.80c to 1.85c
Pacific Coast, c.i.f.	2.05c to 2.15c

Bars

SOFT STEEL

Pittsburgh, base	1.60c
Chicago, base	1.70c
Birmingham base	1.80c to 1.85c
Lackawanna, N. Y., base	1.70c to 1.75c
Pacific Coast, c.i.f.	2.05c
Detroit, base	1.75c
Cleveland, base, local del.	1.70c
Cleveland base, out. del.	1.65c
Philadelphia, del.	1.89c to 1.94c
New York, del.	1.93c
Boston, del.	2.00c
Pittsburgh, cold finish	**1.85c**
Pittsburgh, forg. qual.	**1.90c**

RAIL STEEL

Chicago Heights	1.60c
Eastern mills	1.50c to 1.55c
Pittsburgh	1.30c to 1.35c

IRON

Chicago, base	1.70c to 1.80c
New York, delivered	1.93c
Philadelphia, delivered	1.89c
Pittsburgh, refined	2.75c to 4.25c

REINFORCING

Pitts., billet cut lengths	1.75c to 1.85c
Stock lengths, mill	1.60c
Chi., billet	1.60c to 1.80c
Chi., rail steel	1.50c to 1.65c
Chi., rail steel, bridge and culvert	1.60c to 1.65c
Philadelphia, cut lengths	2.14c
Cleveland, cut lengths	1.95c to 2.05c

Cold Finished Bars, Shafting

Base, Pittsburgh, Chicago, Buffalo and Cleveland	2.10c
Shafting, turned and ground, mill	2.45c to 2.90c

Corrosion, Heat Resist. Alloys

Base, Pittsburgh

18 per cent chrome, 8 per cent nickel Sheets, 35c; plates, 31c; bars, 28c.

	A	B	C	D
Bars	19c	20.5c	23c	28c
Plates	21c	22.5c	25c	30c
Sheets	26c	27.5c	30c	35c
Hot strip	19c	20.5c	23c	28c
Cold strip	28c	29.5c	32c	37c

Carbon 0.12 and under; no nickel. A has chrome 15% and under, B over 15/18% inc., C over 18/23% inc., D over 23/30%.

Wrought Washers

Carloads, Pitts. dist.	$6.50 to $6.75 off
Carloads, Chicago dist.	7.00 to 7.50 off

Alloy Steel

Hot Rolled—F.o.b. Mills

Alloy Quality Bars, 2.65c, mill

S.A.E.	Alloy Diff.	S.A.E.	Alloy Diff.
2000	0.25	1.25-1.75 Ni.	1.05
2100	0.55	5100 .80 - 1.10 Cr.	0.45
2300	1.50	51.00 Cr. spring	0.20
2500	2.25	6100 bars	1.20
3100	0.55	6100 Spring	0.95
3200	1.35	Cr., Ni., Van.	1.50
3300	3.80	Carbon Van.	0.95
3400	3.80	9250 (flats)	0.25
4100 .15 to .25 Mo.	0.50	9250 (rds.,sq.)	0.50
4600 .20 to .30 Mo.			

Strip, Hoops Bands

Hot strip, to 6-in., Pitts.	1.65c
Do, 6 1/16 to 24-in., Pitts.	1.55c
Hot strip, bands 6 in. and under, Chicago	1.75c
Do. 6 1/16 to 24 in.	1.65c
Cooperage hoop, Pitts.	1.70c to 1.80c
Do, Chicago	1.90c
Cold rolled strip, Pitts., Cleve., 3 tons, over	2.15c
Worcester, 3 tons, over	2.30c

Rails, Track Material

Standard bess. and open hearth rails, mill	$43.00
Relay rails, Pitts., 20 to 45 lbs.	**$22.00 to $26.00**
50 to 75	**20.00 to 24.00**
80 to 100	**24.00 to 27.00**
Light rails, 25-45, mills	$34.00
Light rails, Chicago	$36.00
Angle bars, Chi. base	2.75c
Spikes, railroad, mills	2.70c
Spikes, railroad, 7/16-in. and smaller, Pitts.	2.70c
Spikes boat, barge, Pitts.	**2.90c**
Spikes, railroad, Chi.	2.80c
Track bolts, Pitts., steam roads	3.80c
Do. standard, jobbers	73 off list
Track bolts, Chicago	3.80c
Tie plate, mills	$39.00

Bolts and Nuts

Pittsburgh, Cleveland, Birmingham, Chi.

Discounts to legitimate jobbing or large consuming trade for full-case lots apply to May 10, 1930, lists.

CARRIAGE BOLTS

All sizes, cut thread ..... 73 and 10 off

Rolled thread ⅜ x 6 and smaller take 10 per cent lower list.

Eagle list ..... 73 and 10 off

MACHINE BOLTS

All sizes, cut thread, lag screws, plow bolts, Nos. 1-2-3-7 heads, tap bolts, blank bolts, stud bolts without nuts ..... 73 and 10 off

Tire bolts, 60, 10 and 10 off.

Stove bolts, 80, 10, 10, 5 off in pkgs.; 80, 10, 5, 2½ off in bulk.

Rolled thread machine bolts, ⅜ x 6 and smaller take 10 per cent lower list.

NUTS

Semifinished ..... 73 and 10 off

HEXAGON CAP SCREWS

Milled ..... 80-10-10-5 off

Upset 1 in. diam. and smaller ..... 85-10 off

SQUARE HEAD SET SCREWS

Milled ..... 80-5 off

Upset 1 in. and smaller ..... 80-10-5 off

Upset, larger than 1 in. ..... 80-5 off

Cut Nails, Chain, Piling

Cut nails, c.l. Pittsburgh 2.50c

Do, less carloads, 5 kegs or over, 2.75c; less than 5 kegs 2.90c.

Chain, BB, BBB, 9/16-1½ in. ..... 33 1/3 off

Sheet piling, Pitts. 1.90c

Bars

Demand Light and Production at Low Rate—Reinforcing Material Seasonally Active

BAR PRICES, PAGE 53

Chicago—Bar mill schedules remain at about 35 per cent. Scattered automotive releases to western parts makers and mills result almost entirely from regular periodic buying of two or three makers. Shipments of deformed bars for public projects are heavy and will continue at this rate for at least 30 days, on pending work. Bar prices are based on 1.70c, Chicago, little business having been available in the last ten days to offer a further test. Sales contracts usually extend no more than 30 days. Sales and specifications in all heavy finished products have gained a little, illustrative of spotty buying and hot weather operations. Road machinery builders are ordering only in proportion to the season, and no additional cheer is noted in the farm equipment industry except that stocks of finished implements are less of a problem.

Philadelphia — Although 1.65c, Pittsburgh, is done in some cases, 1.60c is the dominating figure on steel bars. Trading is light. Common iron bars are nominally 1.60c, Pittsburgh.

Pittsburgh—Steel bar sales continue at a low rate and are moderately smaller than during June. Requirements of cold bar finishers continue to decline and reduced operations in the automotive industry have the greatest effect on bar demand. The market shows improved stability at 1.60c, although new business is too light to provide a thorough test.

Youngstown, O.—Buying of common steel bars, aside from bars going into concrete work, continues to drift, with mill shipments here just matching operating rates of about 40 per cent. Auto partsmakers are taking only needed quantities of alloy steel bars. With the other usual large buyers of bars off the market such as railroads and agricultural implement makers, bar prospects are not particularly promising for the immediate future. The price holds at 1.60c to 1.65c, Pittsburgh, the first named being for large buyers.

Cleveland—Merchant steel bar orders continue small but fairly frequent. July sales run, for nearly all interests, behind June. The Cleveland base of 1.70c continues for bars locally delivered and 1.65c, Cleveland, outside delivery or 1.60c, Pittsburgh, is quoted, depending on which base is favorable to the customer. Automotive forging plants are slowing locally. Alloy bar price is unchanged at 2.65c, f.o.b. mill.

Cold-Finished Sales Volumes Continue Light

Cold Finished Prices, Page 53

Pittsburgh—Shipments of cold-finished steel bars continue to decline slowly and quietness in new business points to a lack of prospective improvement in automotive operations in the near future. Shipments and orders are off moderately from the June volume. Prices are subjected to little test because of the quietness in new business, the market generally continuing 2.10c.

Cleveland—Inquiry in general has displayed a slight improvement though without marked increase in sales volumes. Orders continue to be of small size. The figure of 2.10c, Cleveland, is quoted on new business. Material is being released at the 2.00c figure on large attractive accounts.

Tin Plate Operations Down to 55 Per Cent

Tin Plate Prices, Page 53

Pittsburgh—Seasonal influences continue to restrict activity in tin plate. Specifications are declining and operations again are lower. Some mills are down completely for an occasional week and the current average is around 55 per cent. Little change in business is looked for although requirements of the can-makers may be altered by development in the various food packs. Tin plate continues $5, Pittsburgh, per base box.

Youngstown, O.—With the seasonal drop in demand for tin plate, mills are completing fill-in orders. The Warren mill this week started 11 units of its total of 24 but is not sure whether it will continue them through the week. Good tin mill operation is not expected until the mills begin in the autumn to make plate against winter needs.

Plates

Tank Inquiry More Active—More Depending Upon Financing—Chicago Operations Off

PLATE PRICES, PAGE 53

Chicago—Skelp shipments for pipe line work are near completion on the active program of cross-country lines. Storage tank inquiry from the oil country remains promising with 5000 to 8000 tons on definite inquiry and more than 10,000 tons nearing the active stake, depending upon financing of the projects. About 2500 tons additional has been awarded for tank building in Oklahoma City territory and on the coast. Plate prices continue nominal at 1.70c, base. Plate mills, which have been at or above 40 per cent since the first of the year, are expected to settle to about 35 per cent within the next week. The Northern Pacific inquiry for underframes and car superstructures will require about 3000 tons of plates and light structural material.

Philadelphia—Plate prices are holding, generally 1.70c, base, Coatesville, Pa. Trading is light. The Atlantic Refining Co. has placed an additional 900 tons for tanks with the Chicago Bridge & Iron Works, Chicago, bringing the total of its recent order to 1500 tons.

Pittsburgh—Plate mills are depending largely upon miscellaneous demands, requirements of large consumers being light. Demand for line pipe continues quiet and the river equipment market is slow. Tank work involves only small lots. The market is fairly steady at 1.60c with immediate business providing little test.

Cleveland—July probably will show a slight improvement in total tonnage over June due mainly to small odd-lot orders becoming numerous the latter three weeks of July.

Specifications from several local boiler shops are better. Customer inquiry in the main is large and well diversified but actual closing of pending business is far from brisk. The 1.60c, Pittsburgh base, represents the market.

Warren City Tank & Boiler Co. took the Bedford, O., tank job, 75 tons, and 114 tons in a tank for the City of

Cleveland has been placed with an unstated interest.

Contracts Placed

1600 tons, rebuilding La Fruta dam, Corpus Christi, Tex.; bids Aug. 10, Cummins & Elrod, engineers. Work also includes 10 tainter, gate and sluice valves.

1126 tons, armor plate, navy department, to Carnegie Steel Co., Pittsburgh, $490 and $610 a ton, and Midvale Steel Co., Philadelphia, $540 a ton.

200 tons, sheet piling, foundations, 48-story bank and office building, Continental Realty Corp., 30-40 Broad street, New York, to Carnegie Steel Co., Pittsburgh.

114 tons, 1,000,000 gallon tank, City of Cleveland, to unstated interest.

Contracts Pending

1406 tons, navy yard, Norfolk; bids July 22, John T. Hill, Baltimore, low. All but approximately 23 tons bid 1.87c.

Unstated tonnage, 300,000-gallon steel tank, Maxwell Field, Ala., Chicago Bridge & Iron Works, Birmingham, Ala., low.

Unstated tonnage, two tanks, combined capacity 750,000 gallons, Parsippany-Troy Mills, N. J. Bids July 30 with alternate on reinforced concrete; Alexander Potter, New York, engineer.

Obituaries

(*Continued from Page* 23)

and steel fabricator, died July 21. He was well known as an inventor and artist.

□ □ □

L. H. Hoskins, Philadelphia, died July 16. He was associated with Roger Brown & Crocker Bros. Inc., and prior to that with Crocker Bros. He spent altogether 30 years with these companies, of which two were in Cincinnati and 28 in the Philadelphia district.

□ □ □

Thomas Dunbar, 67, with Pullman Car & Mfg. Corp., Chicago, for 31 years, died July 21 at Lauderdale Lake, Wis. A native of Scotland, Mr. Dunbar came to Chicago as a boy, joining the then Pullman Palace Car Co. in 1885 He became superintendent in 1902 and was mechanical superintendent of all Pullman shops from 1909 until his retirement in 1916.

□ □ □

Walter F. Walker, founder and president, American Skein & Foundry Co., Racine, Wis., died at Chicago July 22. Born in Dundee, Ill., Dec. 6, 1871, he established the business in Racine in 1905 to manufacture wagon skeins. With the decline of the wagon industry, the company turned to other products, including lifting jacks and other gray iron products.

Railroads

Rail Releases Routine—Seasonal Rail Budgets Not Developing—Car Buying Low

TRACK MATERIAL PRICES, PAGE 53

Chicago—Rumors that an inquiry for 3000 to 4000 cars from a western road is taking shape have not been substantiated. The feeling is that favorable action on the railroads' appeal for higher freight rates will result in more car repair work than purchase of new rolling equipment. The 500 underframes and superstructure sets for Northern Pacific railroad will take about 3000 tons of finished steel. Releases on rails are continuing at about 2000 tons weekly. Track fastenings releases gained slightly in the last week. New seasonal steel rail budgets, which sometimes begin to make their appearance in September, probably will be deferred this year. Rail mill operations continue at 20 to 25 per cent.

New York—Approximately 140 domestic freight cars are actively pending, one of the smallest totals on record. Placing of 200 sugar cane cars for Porto Rico and 225 container cars for the New York Central are outstanding here. Savannah and Atlanta's six steel caboose underframes have been placed.

Pennsylvania railroad is inquiring for an unstated tonnage of structural shapes and locomotive tires. Two structural contracts are pending for the railroad, the other Aug. 4.

Pittsburgh—Releases from railroads against old orders generally lack improvement though specifications are being received for some business that had been deferred. Orders so far this month lack improvement over June volume and new inquiry is light.

Cleveland—Purchases of steel by the carriers has almost reached infinitisemal proportions. Maintenance repairs are deferred and orders placed last year are permitted to lie dormant on the mills' books. Track laying gives promise of being over for the balance of 1931. Chesapeake & Ohio recently bought 1600 tie plates.

Rail Orders Pending

Colorado & Wyoming Railway Co., 395 tons; bids close Aug. 1. Also included are 50,000 tie plates, 575 kegs standard track spikes, 150 kegs track bolts and 1100 angle bars.

Carol Engineering Inc., designer and maker of sand conditioners, has moved its main offices from Dayton, O., to 549 West Washington boulevard, Chicago.

Warehouse Sheet Gages Adjusted at Chicago

Warehouse Prices, Page 69

New York—July sales are below June, although a few attractive orders have been booked by some distributors. Sheet volume has been light and stocks of blue annealed are fairly heavy.

Boston—In the past week a slightly better volume of business was done by jobbers than the week prior.

Philadelphia—Following the recently noted $3 advance in black and galvanized sheets, warehouse prices are unchanged. July shows a slight decline from June in sales.

Pittsburgh—Sales remain quiet but show little tendency to decline further from the low rate experienced over the past month. Some sheet prices have been advanced by several sellers.

Cleveland—Demand continues low. Orders are scarce and involve but little material. Prices are unchanged and as a rule are firm.

Detroit—Sales volumes of July held closely to the mark established in June, a satisfactory performance. Slight revision in iron bars, cold-finished rounds and hexagons price from stock is noted.

Cincinnati—Jobbers report demand below July, 1930, but little changed from June. Prices are unchanged.

Chicago—Gage differentials on several steel sheet grades from warehouse stock have been adjusted to equalize relationships resulting from the recent new mill classifications on sheets. New differentials are effective at once. Base prices remain unchanged. Jobbers look for two to three weeks of continued dull business.

St. Louis—Demand for steel goods from store continues in limited volume reflecting the usual seasonal trend. Country distributors and machine shops, whose stocks are almost universally at unusually low levels, have been obliged to purchase.

Tulsa, Okla.—Prices on several steel products from stock have been cut $3 a ton. Revisions are to be noted through the general list.

Structural Shapes

Awards, 37,732 Tons, Heaviest in Five Weeks—125,000 Tons Out at New York Within Two Months—Chicago Pending Large—Total New Pending, 55,599 Tons

STRUCTURAL SHAPE PRICES, PAGE 53

New York—Within the next two months 125,000 of shapes will be out here for numerous large work that now looms practically active. Post & McCord have the steel contract for the Bankers' Trust building, 10,200 tons, which will be fabricated by the American Bridge Co. Outside of this award, contracts placed, while fairly numerous, are light in tonnage. Fresh inquiry includes approximately 7500 tons for the final section Westside elevated highway. The parcel post building may take close to 20,000 tons. A group of buildings at the Pilgrim State hospital take approximately 1500 tons, while three schools require 2900 tons, bids going in this week and Aug. 4. Fresh inquiry also includes 1000 tons for New Jersey bridge. Prices on plain material are steady at 1.70c, nearest mill.

More than 10,000 tons of structurals are up for New York city department buildings, including three schools, additions to the Harlem hospital and the Bronx county courthouse. The latter will take at least 5000 tons.

Philadelphia—Shapes manifest the greatest stability in some time, holding at 1.70c, Eastern mill, minimum. Aug. 1 is expected to see the cleanup of most shipments on old contracts.

Pittsburgh—Structural inquiry is quiet and no large jobs are pending following award of the South Tenth Street bridge here. Plain shapes generally are 1.60c, Pittsburgh.

Chicago—Including the Chicago post office, bids for which will close Aug. 10, about 75,000 tons of structural steel is active or will be out soon for figures. Awards largely are public work. Court procedure on property assessments for the Chicago subway indicates the subway may be deferred for some time, or postponed indefinitely. This removes from the market potential structural business of 150,000 to 200,000 tons. Plain structural material is quoted at 1.70c, mill.

Cleveland—Featured by larger number than usual of less than 50-ton jobs, the structural market however fails to include activity in sizeable lots. The 950 tons for the local Juvenile courts group was placed July 29. Several state bridges are in.

New Orleans—Bids will close Sept. 15 on the 58,700 tons of structural steel for the public belt line railroad bridge over the Mississippi river here.

Contracts Placed

10,200 tons, 25-story addition, Bankers' Trust Co., Wall and Nassau streets, New York, to Post & McCord, New York, steel to be fabricated by American Bridge Co., Pittsburgh; Thompson-Starrett Co., general contractors; Shreve, Lamb & Harmon, architects.

4100 tons, South Tenth street bridge, Pittsburgh, to American Bridge Co., Pittsburgh.

2700 tons, 11 hangars, Langley Field, Va., to Belmont Iron Works, Philadelphia, through M. H. Sobel Co., Detroit. Work also includes 75 tons reinforcing bars to Truscon Steel Co., Youngstown, O. Work includes 400,000 square feet No. 6, 4-inch wire mesh.

2500 tons, post office, Louisville, Ky., to Wheeling Structural Steel Co., Wheeling, W. Va.

1500 tons, bridge, Hamilton, Ont., for city council, to Hamilton Bridge Co., Hamilton.

1500 tons, postoffice and federal building, Salt Lake City, Utah, to McClintic-Marshall Co., Bethlehem, Pa.

1200 tons, track elevation work, Dearborn, Mich., for Pere Marquette railroad, to American Bridge Co., Pittsburgh; noted in STEEL, July 23, to unstated.

1150 tons, two bridges, Marquette, Mich., for Pere Marquette railroad, to American Bridge Co., Pittsburgh.

950 tons, Juvenile courts buildings, Cleveland, to unstated fabricator July 29 through J. L. Hunting Co., contractor.

810 tons, three bridges for Pennsylvania railroad, allocated as follows: 200 tons, Ashland avenue, Chicago; 410 tons, Pittsburgh; 210 tons, Lancaster, Pa., all to McClintic-Marshall Corp., Bethlehem, Pa.

650 tons, pediatric unit, Boston city hospital, to Palmer Steel Co., Springfield, Mass.

600 tons, bridge, Brazos, Tex., to McClintic-Marshall Corp., Bethlehem, Pa.

525 tons, post office, Houston, Tex., to Houston Structural Steel Co., Houston.

520 tons, health center, Polk and Grove streets, San Francisco, to McClintic-Marshall Corp., Bethlehem, Pa.

500 tons, addition to general hospital, Buffalo, to R. S. McManus Steel Construction Co., Buffalo.

495 tons, city hall and war memorial, Newton, Mass., to New England Structural Steel Co., Boston.

400 tons, art museum, Worcester, Mass., to Eastern Bridge & Structural Co., Worcester.

380 tons, post office, Shreveport, La., to Jones & Laughlin Steel Corp., Pittsburgh; Algernon Blair, Montgomery, Ala., contractor.

370 tons, memorial building, New Haven, Conn., to Palmer Steel Co., Springfield, Mass.

350 tons, Y. M. C. A., Harrisburg, Pa., to Bauman Iron Works, Reading, Pa.; S. W. Shoemaker & Son, Harrisburg, contractors.

320 tons, post office, Lafayette, Ind., to McClintic-Marshall Corp., Bethlehem, Pa.

300 tons, highway bridge, Reedstown, Wis., to American Bridge Co., Pittsburgh.

300 tons, viaduct, Atlanta, Ga., to Ingalls Iron Works Co., Birmingham, Ala.

300 tons, highway bridge, Port Huron, Mich., to Wisconsin Bridge & Iron Co., Milwaukee.

270 tons, apartment, Fillmore and Sutter streets, San Francisco, to McClintic-Marshall Corp., Bethlehem, Pa.

260 tons, state bridge, New York, to Lackawanna Steel Construction Co., Buffalo.

250 tons, high school building, Ottawa, Ill., to Mississippi Valley Structural Steel Co., Decatur, Ill.

250 tons, building, National Geographical Society, Washington, D. C., to Dietrich Bros., Baltimore.

250 tons, presser station, Boldman, Ky., for United Fuel Gas Co., to Pittsburgh Bridge & Iron Works, Rochester, Pa.

250 tons, school, Ardmore, Pa., to Bethlehem Fabricators Inc., Bethlehem, Pa.

240 tons, highway bridge, Montevideo, Minn., to American Bridge Co., Pittsburgh.

220 mill and office building, Pittsburgh, for Pittsburgh Cut Stone Co., to McClintic-Marshall Corp., Bethlehem, Pa.

220 tons, two bridges, Westwood, Mass., to Palmer Steel Co., Springfield, Mass.

215 tons, bridge No. R. C. 1919, New York state letting July 7, to American Bridge Co., Pittsburgh.

202 tons, garage building, 348 West Twenty-seventh street, New York, to Frederick Iron & Steel Co., New York.

200 tons, state bridge, Westwood-Dedham, Mass., to Palmer Steel Co., Springfield, Mass.

180 tons, additional extension to granite cutting shed, West Chelmsford, Mass., to McClintic-Marshall Corp., Bethlehem, Pa.

180 tons, girder spans, Arcola, Pa., to McClintic-Marshall Corp., Bethlehem, Pa.

180 tons, grade school 25, Wilmington, Del., to Bethlehem Fabricators Inc., Bethlehem, Pa.; William M. Francis Co., Du Pont building, Wilmington, contractor; 80 tons, reinforcing bars to Truscon Steel Co., Youngstown, O.

165 tons, Union street bridge, Bethlehem, Pa., to Bethlehem Fabricators Inc., Bethlehem, Pa.

165 tons, bridge, Elizabeth river, Elizabeth, N. J., to Virginia Bridge & Iron Co., Roanoke, Va.; Snyder Engineering Co., Elizabeth, contractor; 57 tons concrete reinforcing bars to Igoe Bros., Newark.

160 tons, office building, Central Hanover Bank & Trust Co., Seventy-sec-

Awards Compared

	Tons
Awards this week	**37,732**
Awards last week	**24,647**
Awards two weeks ago	**23,000**
Awards this week in 1930	**38,982**
Av. weekly awards, 1930	**35,242**
Av. weekly awards, 1931	**35,911**
Av. weekly awards, June	**38,076**
Total awards to date, 1930	**1,086,774**
Total awards to date, 1931	**1,149,133**

ond street, New York, to Post & McCord, New York.
160 tons, Metropolitan Methodist Episcopal church, Seventh avenue and Thirteenth street, Manhattan (New York), to LaCour Iron Works, Long Island City, N. Y.; Tidewater Building Co., contractor.
160 tons, high school, Everett, Mass., to Boston Structural Steel Co., Cambridge, Mass.
150 tons, United States veterans hospital, Canandaigua, N. Y., to McClintic-Marshall Corp., Bethlehem, Pa.
150 tons, laundry, state hospital, Eastview, N. Y., to V. W. Tarnay, Bridgeport, Conn.
150 tons, hospital, Hartford, Conn., to unstated fabricator.
150 tons, bridges for Nebraska highway commission, to Paxton & Vierling Steel Works, Omaha, Nebr.
150 tons, post office, Key West, Fla., to McClintic-Marshall Corp., Bethlehem, Pa.; Algernon Blair, Montgomery, Ala., contractor.
150 tons, police station, Bronx (New York) to B. Schacht & Son Iron Works, Bronx; H. R. H. Construction Co., contractor.
130 tons, bridge, Holcomb, W. Va., for state highway department, to Vincennes Bridge Co., Vincennes, Ind.
125 tons, academy building, Watertown, Mass., to Boston Structural Steel Co., Cambridge, Mass.
125 tons, addition, Grouverneau hospital, Worth street, Manhattan (New York), to Maxwell Spiro & Co., Jersey City; Hudson Contracting Co., contractor.
115 tons, standpipe, Weston, Mass., to Chicago Bridge & Iron Works, Chicago.
100 tons, barracks, Lakehurst, N. J., to Bear Engineering & Construction Co., Philadelphia.
100 tons, tunnel work, East river, Manhattan-Brooklyn, to American Bridge Co., Pittsburgh.
100 tons, school, Morristown, N. J., to Arny Steel Construction Co., Elizabeth, N. J.
100 tons, school, Haledon, N. J., to Passaic Steel & Iron Co., East Rutherford, N. J.
100 tons, marine tower for McDonald Engineering Co., Chicago, to McClintic-Marshall Corp., Bethlehem, Pa.
100 tons, Trenton street overhead, Toronto, O., to McClintic-Marshall Corp., Bethlehem, Pa.

Contracts Pending

10,000 tons, union station, Los Angeles.
7500 tons, superstructure, New York Central railroad viaduct, Eighteenth to Thirtieth streets, Manhattan, New York; bids Aug. 7.
7500 tons, barges, for United States engineer, St. Louis.
6500 tons, Bronx county courthouse, East 158th street, East 161st street block bounded by Walton avenue, Bids Aug. 14, president of borough of and Mott avenue, Bronx (New York). Bronx.
2000 tons, addition, Harlem hospital, Manhattan (New York); bids in, department of hospitals, New York.
1500 tons, estimated, buildings, Pilgrim state hospital, Pine Aire station, N. Y.
1500 tons, Islais creek bridge, San Francisco; bids to be called for shortly.
1500 tons, vocational high school, St. George, Staten Island (New York); bids Aug. 4.
1400 tons, newspaper plant for *Times-Star*, Cincinnati; Ferro-Concrete Co., Cincinnati, contractor.
1200 tons, bridge for Union Pacific Railroad Co., Clearwater, Calif.; bids to be called for shortly.
1200 tons, United States forest products laboratory, Madison, Wis.; J. P. Cullen & Son, Zanesville, Wis., low, with bid of $859,607.
1000 tons, glass factory, Alameda, Calif., for Owens-Illinois Glass Co.; plans being prepared.
1000 tons, brige beam spans, Springfield, Ill.; bids Aug. 18.
1000 tons, highway bridges, New Jersey, exclusive of 1900 tons for viaduct noted last week.
750 tons, athletic club, Camden, N. J.; bids readvertised.
700 tons, high school, Auburn, N. Y.
650 tons, public school 258, Brooklyn, N. Y.; bids in.
600 tons, post office, Sacramento, Calif.; plans being prepared.
500 tons, school, Hamburg, Pa.; bids July 28.
500 tons, apartment, Santa Barbara and Figueroa streets, Los Angeles; bids received.
500 tons, Natural history building, Springfield, Mass.
450 tons, pier No. 23, San Francisco; plans being prepared.
430 tons, bridges, Columbus, Tex.; Texas highway commission; bids July 30.
400 tons, sheet piling, state jetties, Cape May, N. J.; J. H. Terry Co., Philadelphia, contractor.
400 tons, dental building, University of Minnesota, Minneapolis.
400 tons, bridge, Big Horn, Mont.
400 tons, post office, Glendale, Calif.; plans being prepared.
400 tons, public school 236, Brooklyn, bids in.
364 tons, bridgework, Matador, Tex.; Texas highway commission, bids July 31.
350 tons, battery building, Mare Island, Calif.; bids soon.
300 tons, market, Long Beach, Calif.; bids being taken.
275 tons, Harvard memorial chapel, Cambridge, Mass.

(*Concluded on Page 58*)

Concrete Bars

Pending Items in Greater Volume — Awards Above Weekly Average — Prices Steadier—Illinois Roadwork Deferred — Texas Highway Jobs Out

REINFORCING BAR PRICES, PAGE 53

New York—Reinforcing bar prices are steadier at 1.60c, Pittsburgh. Pending tonnage is heavy, but contractor buyers are slow to close. Northern States Contracting Co., St. Paul, has the contract for the Elizabeth, N. J. sewer plant, 1400 tons. Fresh inquiry also includes about 600 tons for New Jersey highways and bridges. Lettings include 500 tons for a highway in Westchester county.

Chicago—A few Illinois road projects scheduled for this season may be deferred until next year as the result of a ruling by the state attorney general that under the prevailing wage rate law enacted recently all public works not actually under contract July 1, the day the law became effective, must be readvertised. New bids for a number of these projects will be received Aug. 18. Rail steel reinforcing bars for road work are quoted 1.60c to 1.65c. Billet bars show continued weakness. About 40 federal postoffice jobs are before the market, some of which are under 100 tons each.

Boston—Contracts for two round tonnages in concrete bars were placed last week, amounting to 450 tons and another 150 tons were contracted for in odd projects.

Philadelphia — Reinforcing bars are showing greater steadiness at 1.60c Pittsburgh. Action on 3300 tons for catenary foundations for Pennsylvania railroad electrification work, Wilmington to Washington, is expected about Sept. 15.

Pittsburgh—Reinforcing bar business is steady, specifications so far this month comparing favorably with the June volume. The market is fair to steady, mill lengths continuing 1.60c.

Awards Compared

	Tons
Awards this week	**7,167**
Awards last week	**6,957**
Awards two weeks ago	**5,464**
Awards this week in 1930	**6,192**
Av. weekly awards, 1930	**6,990**
Av. weekly awards, 1931	**6,986**
Av. weekly awards, June	**6,506**
Total awards to date, 1930	**210,212**
Total awards to date, 1931	**223,571**

Contracts Placed

700 tons, Illinois road work, to Calumet Steel Co., Chicago.
600 tons, sewage disposal plant, Wichita, Kans., to unnamed fabricator through Construction Products Co., Wichita, Kans.; M. E. Gilloiz, Monett, Mo., contractor.
560 tons, bars, conduits, catenary foundations, Pennsylvania railroad electrification work, Wilmington, Del., to Washington, allocated as follows: 190 tons, to Truscon Steel Co., Youngstown, O.; 190 tons to McClintic-Marshall Corp., Bethlehem, Pa.; 180 tons to Concrete Steel Co., Omaha, Nebr.
520 tons, warehouse, Outer Harbor terminal, Oakland, Calif., to Soule Steel Co., San Francisco.
501 tons, highway, Bronx Parkway extension, Croton Lake to Crompton road, Yorktown, Westchester county, N. Y., to Concrete Steel Co., Omaha,

Nebr.; Westchester county park commission, Jay Downer, chief engineer; John Arborio Co., Poughkeepsie, N. Y., contractor.

400 tons, mesh, Metropolitan Life Insurance building, Fourth avenue from Twenty-fourth to Twenty-fifth street, New York, to Consolidated Expanded Metal Co., Wheeling, W. Va.; Starrett Bros. & Eken, general contractors.

400 tons, city hall, Beverly Hills, Calif.; to unnamed interest.

280 tons, Pier No. 38, San Francisco, to Soule Steel Co., San Francisco.

250 tons, East Boston tunnel, section B, Boston, to Concrete Steel Co., Omaha, Nebr.

250 tons, post office, Erie, Pa., to Buffalo Steel Co., Buffalo, through Coath & Goss Inc., Chicago, contractors.

250 tons, post office, Salt Lake City, Utah, to unnamed interest.

220 tons, north side sewer, Lansing, Mich., to Capitol Steel Corp., Lansing.

200 tons, intermediate school, Dorchester, Mass., to Barker Steel Co., Boston.

200 tons, highways and bridges, Long Island state park commission, to unstated interest through Municipal Construction Co., Contractor.

200 tons, postoffice, Rutland, Vt., to Carroll & McCreary & Co. Inc., Brooklyn, N. Y.; Brooklyn & Queens Mfg. Co. contractor.

175 tons, school, Ardmore, Pa., to Concrete Steel Co., Omaha, Nebr.

150 tons, arch bridge, Second river, Newark, N. J., to Igoe Bros., Newark, through J. W. Heller Co.

150 tons, addition to postoffice, Freeport, Ill., to Kalman Steel Co., Chicago.

150 tons, reservoir and sewage treatment plant, Eloise, Mich., to Capitol Steel Corp., Lansing.

145 tons, highway, route S-3, section 2, Erie railroad (Allwood) to Hepburn road, Clifton, N. J., to Stulz-Sickles Co., Newark, N. J.; Nesto Contracting Co., Newark, contractor. New Jersey state highway commission contract.

120 tons, highway route 10, section 2, Morris and Essex counties, N. J., to Igoe Bros., Newark, N. J., through Frank Snead Co.

118 tons, state highway bridges, Lewis and Whitman counties, Wash., to unnamed interests.

110 tons, Upper Alameda creek dam, San Francisco, to Pacific Coast Steel Corp., San Francisco.

110 tons, track stadium, University of California, Berkeley, Calif., to Gunn, Carle & Co., San Francisco.

110 tons, architectural school, Washington university, St. Louis, to Laclede Steel Co., St. Louis.

100 tons or more, substructure, bridge, Cherokee county, S. C., to Shand Engineering & Sales Co., Columbia, S. C., representing Gulf States Steel Co., Birmingham, Ala.; R. H. H. Blackwell, Kingsport, Tenn., general contractor.

100 tons, bathhouse and swimming pool, Cook County Forest Preserve, Chicago, to Joseph T. Ryerson & Son Inc., Chicago.

100 tons, reservoir, Hornell, N. Y., to Jones & Laughlin Steel Corp., Pittsburgh, Pa.

Unstated tonnage 90,000 squares, extra galvanized steel wire fabric, for United States engineer, Memphis, Tenn., equally divided between American Steel & Wire Co., $51,018.75, Birmingham, and $50,850, Caruthersville, Mo., and Pidgeon-Thomas Iron Co., Memphis, Tenn., $51,052,250, Fairfield, Ala., and $50,850, Caruthersville, Mo.

19,000 square feet mesh, for Picatinny arsenal, Picatinny, N. J., to Joseph T. Ryerson & Son Inc., Chicago, on bid of .0166c per square foot. American Steel & Wire Co., Chicago, quoted same price and decision was made by drawing.

Contracts Pending

4000 tons, sewage extension, fourth division, Calumet project, Chicago; bids Aug. 13.

2650 tons, sewer extension, two contracts, Louisville, Ky.; bids Aug. 6 and 20.

1346 tons, public belt line railroad bridge, New Orleans, bids Sept. 15. Work as follows: 565 tons, substructure approaches; 500 tons, substructure; 168 tons, superstructure approaches; 113 tons, superstructure.

1200 tons, addition to Cook county nurses' home, Chicago.

1150 tons, newspaper plant for *Times-Star*, Cincinnati; Ferro-Concrete Co., Cincinnati, contractor.

1000 tons, construction at Oklahoma City, Okla., for Atchison, Topeka & Santa Fe railroad.

750 tons, approaches, Ohio river bridge, Henderson, Ky.; Globe Contracting Co., Evansville, Ind., contractor.

500 tons, Calumet sewage treatment works, Chicago.

385 tons, bridgework, Madisonville, Tex.; Texas highway commission; bids Aug. 10.

345 tons, highway with bridge approach slabs route 25 (1927), sections 6A, 5A and 4B, route 4 to Cranbury turnpike, Middlesex county, New Jersey; bids Aug. 10, New Jersey state highway commission, A. Lee Grover, chief clerk, Trenton, N. J.

300 tons, bridge at Harlem avenue and Chicago drainage canal, Chicago.

285 tons, rebuilding La Fruta dam, Corpus Christi, Tex.; bids Aug. 10, Cummins & Elrod, engineers.

275 tons, highway and one small span bridge, route S-24 (1927), section 1, Elmora avenue to Stuyvesant avenue, Union county, New Jersey; bids Aug. 10, New Jersey state highway commission, A. Lee Grover, chief clerk, Trenton, N. J.

215 tons, bridgework, Boerne, Tex.; Texas highway commission; bids July 30.

(*Concluded on Page* 59)

Structural Shapes Pending

(*Concluded from Page* 57)

260 tons, bridgework, Paducah, Tex.; Texas highway commission; bids July 30.

250 tons, bridgework, Lockhart, Tex.; Texas highway commission; bids July 30.

250 tons, addition to Danforth technical school, Toronto, Ont.

238 tons, three bridges, State of Ohio, including the following: 116 tons, Union county; 70 tons, project No. 300, Todd's Fork, O.; 52 tons, Columbiana county; bids opened July 28 and 31, O. W. Merrill, state highway director, Columbus, O.

225 tons, pier No. 5, Oakland, Calif.; plans being prepared.

210 tons, two state bridges, Columbia county, Pa.; L. L. Kister, Lewisburg, Pa., contractor on one and C. & D. Construction Co., Altoona, Pa., on other.

200 tons, factory for Curtiss Mfg. Co., Glendale, Calif.; plans being prepared.

200 tons, warehouse, Mare Island navy yard, Mare Island, Calif.; bids July 29.

200 tons, high school, Pottsville, Pa.; bids Aug. 26.

200 tons, overhead crossing, Orange and Hill streets, Long Beach, Calif.; bids to be called for shortly.

186 tons, angles and channels, navy yard, Norfolk; Egleston Bros., Long Island City, N. Y., low on 192,200 pounds angles at 2.02c; Jones & Laughlin Steel Corp., Pittsburgh, low on 10,000 pounds angles at 2.05c; Bethlehem Steel Co. low on 169,000 pounds steel channels at 2.045c.

175 tons, school, Souderton, Pa.; bids opened.

160 tons, apartment, Pacific and Fillmore streets, San Francisco; bids opened.

150 tons, pier No. 42, San Francisco; bids to be called for shortly.

150 tons, pier No. 38, San Francisco; bids being taken.

140 tons, wharf sheds, Port of New Orleans, La.; bids July 31.

140 tons, state bridge, Auburn, Mass.

137 tons, bridgework, Franklin, Tex.; Texas highway commission; bids July 30.

134 tons, bridgework, Alice, Tex.; Texas highway commission; bids July 30.

125 tons, Keenan health center, Milwaukee; C. Hennecke Co., Milwaukee, low, $13,308.

100 tons, filtration plant, Sacramento Calif.; bids being taken.

100 tons, two bridges, Philadelphia & Western railroad, Philadelphia district; Guy Meyers, Philadelphia, contractor.

Pipe

Steel Pipe Fairly Active—10,000 Tons Seamless Up—Cast Prices Continue to Sag

PIPE PRICES, PAGE 69

New York—Cast pipe lettings are under 3000 tons with approximately 1400 tons, mostly 10-inch for Le Roy, N. Y., going to the Florence, N. J., foundry. Fresh inquiry is led with 3250 tons for a water extension for Parsippany-Troy Mills, N. J., bids July 30. A 48-inch line for Chester, Pa., will take 600 tons, part of the work to be under the Delaware river. Prices continue to sag.

Chicago—Contractors are purchasing from 500 to 1000 tons of miscellaneous size pressure pipe for the Calumet sewage disposal project, and Fox Point Wis., will close July 31 on 1100 tons of cast sizes. Prices for 6 to 24-inch sizes remain at a range of $42 to $44, delivered Chicago.

Cast Pipe Placed

8000 tons, Corpus Christi, Tex., distributed between American Cast Iron Pipe Co., Birmingham, Ala., and United States Pipe and Foundry Co.,

East Burlington, N. J.

1805 tons, Oakland, Calif., allocated as follows: United States Pipe & Foundry Co., East Burlington, N. J., 635 tons 6-inch class 150; to R. D. Wood & Co., Florence, N. J., 454 tons 8-inch class 150; and to Pacific States Cast Iron Pipe Co., Provo, Utah, 716 tons, 2 and 4-inch class 150.

1400 tons, 10 to 14-inch, Le Roy, N. Y., to R. D. Wood & Co., Florence, N. J.

455 tons, 20-inch, Manhattan (New York), to United States Pipe & Foundry Co., East Burlington, N. J.; Stefano Contracting Co., contractor.

250 tons, 16-inch monocast, Wenatchee, Wash., to American Cast Iron Pipe Co., Birmingham, Ala.

127 tons, 6-inch class 150, Riverside, Calif., to Pacific States Cast Iron Pipe Co., Provo, Utah.

32,000 feet, 6 and 8-inch, Southampton, Mass., to R. D. Wood & Co., Florence, N. J.

26,800 feet, 2½-inch wrought iron pipe, conduit system, Fort Lee bridge plaza, N. J., to Mohawk Conduit Co. Inc., Cohoes, N. Y., through Graybar Electric Co., New York. Campbell Foundry Co., Harrison, N. J., awarded 75 cover castings, 18 by 36-inch, and 145 castings, 12 by 18-inch. Thomas Tenore, Maplewood, N. J., contractor.

Steel Pipe Placed

4500 tons, 20-inch, 19 miles, line from Owosso, Mich., to St. Johns, Mich., for Central Public Service Corp., to United Engineers & Constructors, Philadelphia.

3500 tons, 50 to 60 miles, 8⅝-inch steel pipe for Iroquois Gas Line, to Republic Steel Corp., Youngstown, O.

Cast Pipe Pending

2100 tons, various sizes, sewage extension, fourth division, Calumet project, Chicago; bids Aug. 13.

1100 tons, 6 to 12-inch pipe, Fox Point, Wis., also 25 tons of special fittings; bids July 31.

600 tons, 48-inch sewer lines, part under Delaware river, Chester, Pa.; bids Aug. 11; G. L. Hunter, director of improvements.

200 tons, 10 and 12-inch, Lancaster, Pa.; bids in July 29; J. N. Chester, Pittsburgh, engineer.

200 tons, 4 to 12-inch, water line extension, Parsippany-Troy Hills, Morris county, N. J.; bids July 30 with alternates on five types of pipe; Alexander Potter, New York, engineer.

Unstated tonnage, 15,515 lineal feet, 6 to 20-inch, for Metropolitan sewerage district, Madison, Wis.; bids close Aug. 3.

Steel Pipe Pending

10,000 tons, 18-inch seamless, foundation for West Side elevated highway, Twenty-second to Thirty-eighth streets, New York; Poirier & McLane Corp., low on contract.

3100 tons, 120 miles, 4-inch steel pipe, installation in Iowa and Nebraska, for Great Lakes Pipe Line Co.

2000 tons, 20,575 feet, 54-inch lock bar or welded steel pipe with alternates on 51-inch reinforced concrete pipe, Passaic Valley water commissiion, Paterson, N. J.; bids Aug. 3.

700 tons, 48 and 72-inch steel pipe, department of water supply, New York; bids Aug. 4.

Wire

Light Demand General—Western Mills Await Crop Movement to Start Buying

WIRE PRICES, PAGE 53

Chicago—Western wire mills feel that good crop prices now unquestionably would bring out a fair volume of merchant wire business next month, but with some grain crops being held from the market and low prices obtained for crops sold, estimates of August repair and replacement business are being revised downward. An important rush order for manufacturers' wire, covering some specific work, has been the only feature. A nominal quotation of $1.95, Chicago or western mills, now is made to jobbers for wire nails, and 2.25c is quoted for plain wire. The price on nails has not been established by actual sales.

Philadelphia—Jobber demand is too light to test the $1.90, Pittsburgh price on wire nails. Wire is nominally 2.20c, Pittsburgh.

Pittsburgh—Shipments of wire products are little changed from the light June volume. Demand for jobbing products is fairly steady but requirements of some industries for manufacturers' wire reflect the reduced industrial activity this month. Plain wire continues 2.20c with wire nails $1.90 to jobbers and $2 to the merchant trade. Wire rods continue $35.

Cleveland—Demand for nails has not developed since the announcement of $1.90 minimum per keg in attempts to rid the market of the $1.80 price. Plain wire is firmer at 2.20c, Pittsburgh, with 2.10c superseded. Spring wire is steady at 3.20c.

Nuts, Bolts, Rivets Show Decline in Volume

Bolts, Nuts, Rivets Prices, Page 53

Pittsburgh — Specifications for bolts, nuts and rivets are moderating, recently being near the lowest level of the year. July business is off moderately from the June volume. Consumers have small stocks but show no tendency to increase supplies. Prices are steady at 73 and 10 off for bolts and nuts and 2.75c, Pittsburgh, for large rivets.

New York—Low prices reported recently have been withdrawn and bolts and nuts are firm at 73 and 10 off. Demand is listless and eastern producers are operating at less than 30 per cent of capacity.

Chicago—Producers' operations are about 30 per cent. Rivets, 7/16-inch and smaller, are unchanged at 70, 10 and 5 off. Bolts and nuts are quoted at 73 and 10 off. Specifications from all leading buyers are subnormal. A few scattered automotive releases have featured the market recently.

Auto Tags of Copper

Automobile license plates for Arizona in 1932 will be made of sheet copper instead of steel, the motor vehicle division specifying use of the former in asking bids for manufacturing the plates. This is an effort to add to the use of the metal produced in the state.

Concrete Bars Pending

(*Concluded from Page* 58)

196 tons, three bridges, State of Ohio, including the following: 73 tons, Warren county; 65 tons, Wyandotte county; 58 tons, Madison county; bids opened July 28 and 31, O. W. Merrill, state highway director, Columbus, O.

182 tons, pavement, Sherman, Tex.; Texas highway commission; bids July 30.

180 tons, Juvenile courts buildings, Cleveland; J. L. Hunting Co., contractor.

177 tons, roadwork, Ft. Worth, Tex.; Texas highway commission; bids July 31.

172 tons, roadwork, Wenton, Tex.; Texas highway commission; bids July 31.

170 tons, county home, Wayne, N. J.

160 tons, rebuilding Third street viaduct, Tulsa, Okla.; bids to be asked shortly; Wood & Witten, Tulsa, engineers.

160 tons, roadwork, Panhandle, Tex.; Texas highway commission; bids July 31.

150 tons, Harvard memorial chapel, Cambridge, Mass.

150 tons, roadwork, Wheeler, Tex.; Texas highway commission; bids Aug. 1.

150 tons, building, department of justice, Chillicothe, O.; Jones & Laughlin Steel Corp., Pittsburgh, low.

133 tons, bridgework, Ozona, Tex.; Texas highway commission; bids Aug. 1.

125 tons, bridgework, Matador, Tex.; Texas highway commission; bids July 31.

125 tons, roadwork, Pecos, Tex.; Texas highway commission; bids Aug. 1.

124 tons, highway, Bronx parkway extension, from Broadway to Saw Mill river road, Mt. Pleasant, N. Y., bids Aug. 10, Westchester county park commission; Jay Downer, chief engineer.

120 tons, roadwork, Lubbock, Tex.; Texas highway commission; bids July 30.

111 tons, Los Angeles country, Calif.; bids opened.

102 tons, bridgework, Lockhart, Tex.; Texas highway commission; bids July 30.

Strip

Little Change in Specifications —Production Is at Low Rate— Price Holding Fairly Well

STRIP PRICES, PAGE 53

Pittsburgh—Activity in strip steel remains at its recent low levels, little change being noted in specifications or shipments. Automotive requirements are quieter than a month ago and a prospective reduction in operations during August is having an adverse effect upon new strip business. The price situation is encouraging to producers, quotations on such new business as has appeared recently holding firmly at 1.55c and 1.65c for hot strip while cold-rolled strip is steady at 2.15c. Mill operations continue irregular, averaging around 20 to 25 per cent for hot mills and 15 to 20 for cold strip.

Philadelphia—Hot-rolled strip is steady at 1.55c, Pittsburgh, for wide and 1.65c for narrow. Cold-rolled is holding at 2.15c to 2.25c, Pittsburgh.

Youngstown, O.—Strip consumers have been busy the past fortnight specifying every possible pound under the old scheme of purchase against the delivery deadline of July 31. On and after Aug. 1 the new classification applies and from present appearances, this will be rigid with all producing mills.

Considerable new business is coming in from day to day under the new classification, sufficient to run the hot mills around 40 to 45 per cent of capacity but with cold-rolling mills at somewhat less rate. No especially interesting prospects face the mills for August, at least in the early part of that month.

Cleveland—New prices of 1.55c and 1.65c, for wide and narrow hot-rolled strip were billed on several small orders by mills last week. Stamping plants continue to suffer from irregular operations. The above-named prices hold well in the Detroit district on such automobile orders as are placed. Cold-rolled strip is quoted on the local base at 2.15c, with 2.25c named on small orders of a ton approximately, or less.

Chicago—Cold-rolled strip releases are confined largely to two or three automotive makers. A fair order has been released in this district for urgent special production requirements. Mill operations are about 25 per cent. Quotations as low as 2.15c, Pittsburgh-Cleveland, are made here.

Sparta Foundry Co., Sparta, Mich., will spend $18,000 for improvements to its production facilities. T. E. McFell is president.

Operations Advance Two Points To 32 Per Cent

Youngstown, O.—Steel operations this week advanced to 42 against 34 per cent of capacity a week ago. Twenty-eight open hearths of 66 in the district are melting, compared with 25 a week ago, and independent schedules show 21 of the 51 furnaces available are making steel. In addition, operations at a bessemer plant were resumed after more than a month's idleness. Sheet & Tube operations are ranging from 34 to 37 while Republic, though open-hearth production is considerably higher, reports an average of 38 per cent for its mills. Carnegie operations are at 46 per cent of capacity, unchanged from last week. Sharon Steel Hoop production is unchanged at 34 per cent while sheet mills belonging to Newton Steel Co., Empire Steel Corp. and Mahoning Valley Steel Co., continue idle.

	Per Cent
Operations this week	32
Operations last week	30
Operations two weeks ago	33
Operations this week, 1930	58
High for 1931, (March 19)	57
Low for 1931, (July 23)	30

Philadelphia—Eastern ingot operations are down fractionally to 33 per cent from last week's 33-34 per cent rate. A leading mill is at 33-34 per cent this week.

Buffalo—Ingot activity is up seven points this week to 50 per cent capacity. Bethlehem's Lackawanna plant has added two open hearths bringing the active total to 12. Wickwire-Spencer operates capacity of three open hearths; Republic Steel, one.

Pittsburgh—Ingot production is unchanged at slightly above 30 per cent with blast furnace schedules continuing at 14 active of 54 steelworks stacks. Sheet and tin plate output are lower at around 35 and 55, respectively. Strip continues 20 to 25 with pipe lower at 35.

Cleveland—After dipping to the 27 per cent level last week, ingot operations have gained eight points this week to 35 per cent capacity. Otis Steel Co. has resumed steelmaking with three open hearths on; other interests are unchanged.

Chicago—Ingot output is 28 to 30 per cent. Last week the rate was 29 per cent. An independent steel producer has blown out one of his steelworks blast furnaces, leaving two active out of four. Thus, nine of the district's 36 steelworks stacks are blowing. Sheet mill operations remain relatively high at 40 with the average of other finishing mill schedules about 30 per cent.

Birmingham, Ala.—With the Gulf States Steel Co. operating three open hearths and Tennessee Coal, Iron & Railroad Co. eight, its rail mill being down, steel mills operations are continuing at 35 per cent capacity. Sheet mills are demanding more semifinished than for some months.

Presidential Yacht, as Scrap, Worth $7666

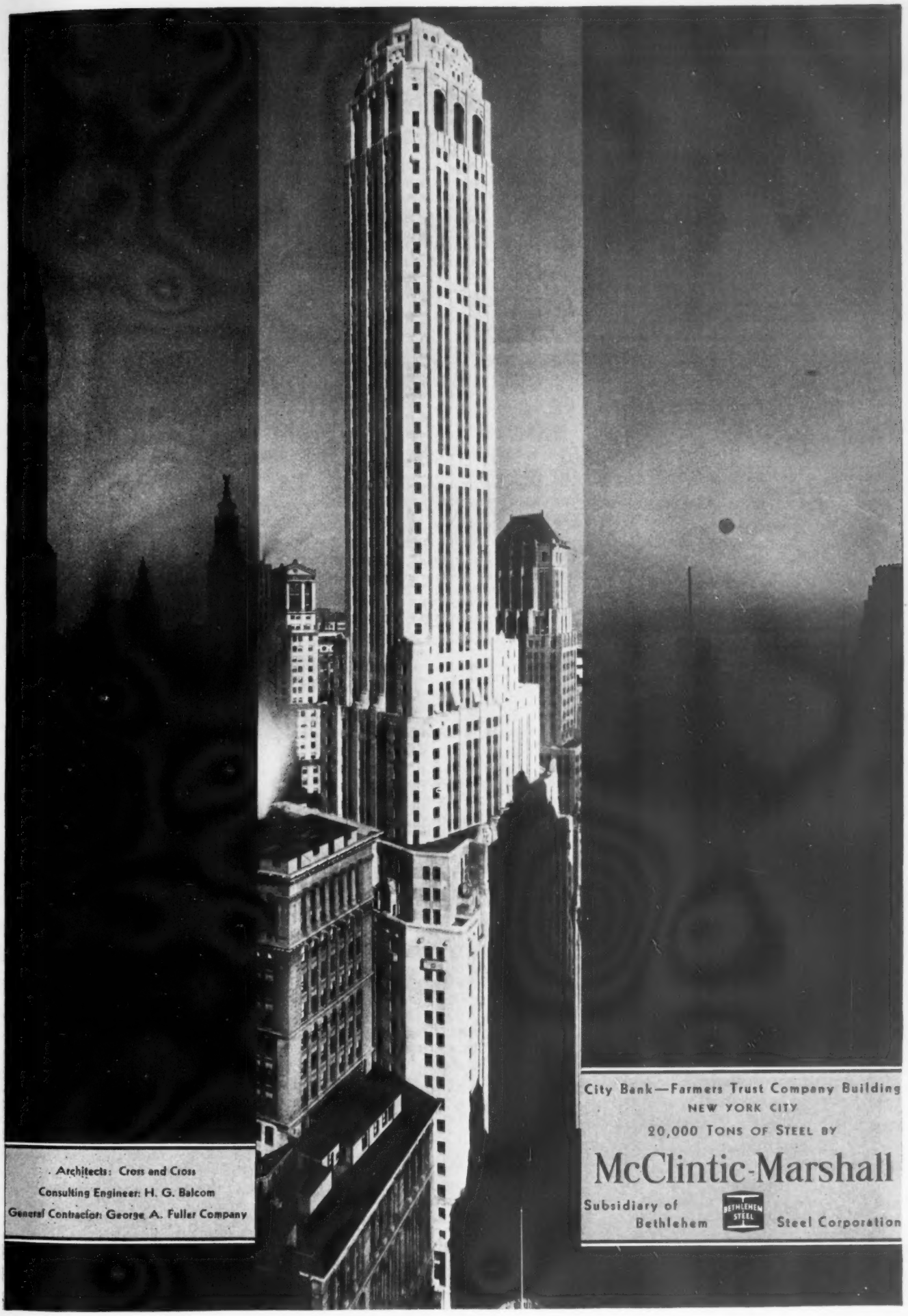
A bid of $7666 has been made for the presidential yacht, MAYFLOWER, by the Boston Iron & Metal Co., Baltimore. The only other bidder, offering $1100, was rejected.

Following a fire in the MAYFLOWER at the Philadelphia navy yard Jan. 22, a navy board of inspectors recommended that she be sold as scrap. The boat was purchased in 1898 for $430,000 and was the presidential yacht during the Roosevelt, Taft, Wilson, Harding and Coolidge administrations.

Arbitrate Scrap Disputes

An arbitration tribunal will be set up July 30 at Cleveland by the Institute of Scrap Iron and Steel Inc. to clear up an unusually large number of cases of dispute between members, arising from difficulties in the present disturbed state of the industry Benjamin Schwartz, director general of the institute, will be the impartial arbitrator in each case, with two additional arbitrators selected by the disputants. Arbitration of commercial disputes between members of the Institute is compulsory.

Lacer Corp., 1224 East Eighth street, Los Angeles, succeeds the Lacer-Hallett Corp. The company makes gray iron, brass and aluminum castings. Another plant is operated at 523 Redmonde boulevard, Inglewood, Calif.


City Bank—Farmers Trust Company Building
NEW YORK CITY
20,000 TONS OF STEEL BY
McClintic-Marshall
Subsidiary of Bethlehem Steel Corporation
Architects: Cross and Cross
Consulting Engineer: H. G. Balcom
General Contractor: George A. Fuller Company

Raw Material Prices

Pig Iron

Per Gross Ton

FOUNDRY, No. 2

Chicago furnace	$17.50
Pittsburgh, dist. fur.	17.50
Pittsburgh, delivered	18.13 to 18.63
Valley furnace	17.00
Cleveland fur., local del.	17.00
Philadelphia, delivered	17.26
Virginia, furnace	17.75
Granite City, Ill., fur.	17.50
Buffalo, fur., local del.	17.00
Buffalo, del. Boston	21.41 to 21.91
Buff., all-rail, Brooklyn	19.91 to 20.91
Buff., all-rail Newark	18.28 to 18.78
Ala., Bir. fur., local del.	12.00 to 13.00
Alabama, del. Chicago	17.01
Alabama, del. St. Louis	15.42
Alabama, del. Cincinnati	14.69 to 15.19
Ala., Phila., dock del.	16.25
Ala., Balt., dock del.	16.00
Alabama, New York dock	16.50
Ala., Boston dock del.	16.75
Tenn., Bir. base, local del.	13.00
Tennessee, del. Cinn.	14.69 to 15.19
Montreal, delivered	23.50
Toronto, delivered	22.10

FOUNDRY, NO. 2X

Buffalo, fur., local del.	17.50
Buff., all-rail, Brooklyn	20.91 to 21.41
Buffalo, all-rail Newark	18.78 to 19.28
Buffalo, del. Boston	21.91 to 22.41
Virginia furnace	18.25
Eastern, del. Phila.	17.76

FOUNDRY, NO. 1X

Buffalo fur., local del.	18.50
Eastern, del. Phila.	18.26

MALLEABLE

Valley furnace	17.00
Cleveland fur., local del.	17.00
Pittsburgh dist. fur.	17.50
Pittsburgh, delivered	18.13 to 18.63
Chicago, furnace	17.50
Buffalo fur., local del.	17.50
Eastern Penna., delivered	18.26 to 20.91
Granite City, Ill., fur.	17.50
Montreal, delivered	24.00
Toronto, delivered	22.60

BASIC

Pittsburgh, district fur.	16.00 to 16.50
Pittsburgh, delivered	16.63 to 17.63
Eastern Penn., del.	16.75
Buffalo fur., local del.	16.50 to 17.00
Montreal, delivered	20.50
Valley, furnace	17.00

BESSEMER

Valley furnace	17.00
Pittsburgh, delivered	18.13 to 18.63
Pittsburgh, furnace	17.50

LOW PHOS.

Valley fur., standard	27.00
Philadelphia, standard	23.76 to 26.79
Copper-bear., E. Pa. fur.	22.50 to 23.00

GRAY FORGE

Valley furnace	16.50
Pittsburgh district fur.	17.00
Pittsburgh, delivered	17.63 to 18.13

CHARCOAL

Lake Superior, del. Chi.	27.04

SILVERY

Jackson County, O., fur., in per cents 6—$21; 7—$21.50; 8—$22; 9—$22.50; 10—$23; 11—$24; 12—$25; 13—$27.

BESSEMER FERROSILICON

Jackson County, O., fur., in per cents 10—$25; 11—$26; 12—$27; 13—$29; 14—$31; 15—$26; 16—$35.

Coke

Prices Per Net Tons

Beehive Ovens

Connellsville furnace	$2.40 to 2.50
Connellsville foundry	3.25 to 4.50
New River foundry	6.00
Wise county foundry	4.25 to 5.00
Wise county furnace	3.50 to 4.25

By-Product Foundry

Newark, N. J., del.	8.70 to 9.10
Chicago, ovens	7.50
New England, del.	10.50
St. Louis, del.	8.50
Birmingham, ovens	5.00
Indianapolis, del.	8.25
Ashland, Ky., ovens, Connell., basis	5.50
Portsmouth, O., ovens, Connell., basis	5.50
Buffalo, ovens	8.00 to 8.50
Detroit, ovens	8.00
Philadelphia, del.	8.75

Iron Ore

LAKE SUPERIOR ORE

Gross ton, 51½%, Lower Lake Ports

Old range bessemer	$4.80
Mesabi bessemer	4.65
Old range nonbessemer	4.65
Mesabi nonbessemer	4.50
High phosphorus	4.40

EASTERN LOCAL ORES

Cents per unit delivered at Eastern Pennsylvania and New Jersey furnaces

Foundry and basic, 56-63%, contract	10.00
Copper-free low phos. 58-65%	nom.

FOREIGN ORE

Cents per units, alongside docks Atlantic ports

Foreign manganiferous ore, 45-55% iron, 6-10% manganese	10.00
North African low phosphorus	8.50
Swedish basic, 65%	9.00
Swedish low phos.	10.00
Spanish, North African basic, 50 to 60%	8.50 to 9.00
Newfoundland fdy., 55%	8.50
Tungsten, spot and future short ton unit, duty paid	$11.25 to $11.50
Chrome ore, 48% net ton c.i.f.	$21.50 to 22.00

Manganese Ore

Prices, not including duty, are cents per unit; cargo lots.

Caucasian, 52-55% (nom.)	26 to 28 cents
South African, 52%	26 to 28 cents
South African, 49-51%	25 to 26 cents
South African, 44-47%	24 cents
Indian, 48-50%	nom.
Brazilian, 46-48% (nom.)	22 cents

Refractories

FIRE CLAY BRICK

Per 1000 f.o.b. Works

First Quality

Pennsylvania, Ohio, Illinois, Kentucky, Missouri, Maryland	$40.00
Georgia, Alabama	40.00

Second Quality

Pennsylvania, Ohio, Illinois, Kentucky, Missouri, Maryland	35.00
Georgia, Alabama	30.00 to 35.00

SILICA BRICK

Pennsylvania	40.00
Joliet, Ill., East Chicago, Ind.	49.00
Birmingham, Ala.	50.00

MAGNESITE BRICK

Per Net Ton

9 x 4½ x 2½	$65.00

MAGNESITE

Dead burned grain, net ton, Chester, Pa., or Baltimore bases	40.00
Domes, Chewelah, Wash., base	22.00

CHROME BRICK

Net ton, Chester, Pa., and Baltimore base, 9 x 4½ x 2½	45.00

Semifinished Steel

PRICES PER GROSS TON

BILLETS AND BLOOMS

4 x 4-inch base

Pittsburgh, open-hearth	$29.00
Pittsburgh, bessemer	29.00
Youngstown	29.00
Cleveland	29.00
Philadelphia	34.30
Chicago	30.00
Forging, Chicago	35.00 to 36.00
Forging, Pittsburgh	35.00 to 36.00
Forging, Philadelphia	39.30

SHEET BARS

Pittsburgh	29.00
Youngstown	29.00
Cleveland	29.00
Chicago	30.00

SLABS

Pittsburgh	29.00
Youngstown	29.00
Cleveland	29.00

WIRE RODS

Pittsburgh, Cleveland	35.00
Chicago	36.00

SKELP

All grades, Pittsburgh	1.60c

Ferroalloys

(In dollars, except Ferrochrome)

*Ferromanganese, 78-82%, tidewater, duty paid	$85.00
*Ferromanganese, del. Pittsburgh	89.79
Spiegeleisen, 19-20%, domestic fur. spot†	30.00
Ferrosilicon, 50 per cent, freight all., c. l.	83.50
Do, less carload	88.50
Do, 75 per cent	130.00 to 150.00
Ferrochrome, 66-70 chromium, 4-6 carbon, cts. lb., con., del.	11.00
Do, for spot delivery	11.50
Ferrotungsten, stand., lb. cont.	1.00 to 1.10
Ferrovanadium, 30-40 per cent, per lb., contained, on analysis	3.15 to 3.65
Ferro-carbon-titanium carload producers' plants, net ton	150.00
Do, one-ton to c. l.	170.00
Ferrophosphorus, per ton, carload 17-19 per cent, Rockdale, Tenn., basis (18 per cent)	91.00
Ferrophosphorus, electrolytic per ton carload, 23-25% f.o.b. Anniston, Ala., 24%	122.50

†Carloads. Differentials apply to large quantities.

*To users of carloads to 500 tons annually Differentials apply to users of larger quantities.

Fluorspar

85 and 5 per cent grade

Washed gravel Kentucky and Illinois mines, per net ton	$13.50 to 14.00
Washed gravel, import duty paid east, tide, gross ton	18.50 to 19.00

Pig Iron

July Shipments Slightly Below June—Buyers Placing Orders Sparingly—Prices Unchanged

PIG IRON PRICES, PAGE 62

Pittsburgh—Sales of pig iron continue restricted to small lots, with little change in the total volume of business. Shipments still are at low ebb. Orders represent immediate needs, foundries operating with little stock. Inquiries are lacking. Prices, nominally $17, base, valley, on basic, bessemer, malleable and foundry, are untested except for small lots.

Boston—Pig iron sales totaled 1500 tons in this district in the past week. Buyers are cautious. Prices are unchanged.

New York—Pig iron sales have dropped perceptibly, aggregating approximately 3000 tons in the past week. Inquiry amounts to about 2000 tons. Prices are steady.

Philadelphia—Pig iron sales are exceedingly light. Prices are nominally unchanged, with eastern Pennsylvania No. 2 plain holding at $17.26, Philadelphia. The rate of production is unchanged.

Buffalo—Buffalo furnaces are understood to have taken 200 tons of a 400-ton lot placed by an eastern melter. Between 5000 and 6000 tons of pig iron is due to be closed within the near future, depending upon melters receiving certain orders that are in prospect. Sales of pig iron during July were somewhat better than during June. Prices quoted to district consumers are firm, but $15.50 and $15 have been done by local producers on eastern business.

Youngstown, O.—Occasional sales of malleable and No. 2 foundry pig iron continue to be made as needs of consumers develop. Bessemer, basic No. 2 foundry and malleable hold at $17, valley furnace. Standard copper-free, low phosphorus continues to bring $27, valley furnace.

Cleveland—Shipments of pig iron in July were slightly below those of June, but an improvement is expected in August. Many foundries deferred shipments and purchases in the latter part of this month in anticipation of reduced operating rates in August, and makers expect the movement to them in the coming month will reflect larger needs for September. Many consumers have been taking inventory; practically all their stocks are low. Inquiries, however, continue light. Sales by furnace interests with headquarters in Cleveland amounted to 4000 tons in the past week. Prices are steady at $17, base, furnace, for delivery in the Cleveland district; $16 to $17 in western Ohio and Indiana, and $17.50 in Michigan.

Cincinnati—The quotation of $11, base, Birmingham, withstood a recent test when an Indiana melter contracted for 1000 tons. Part of the order went to a northern furnace. Total sales in the district in the past week were about 2000 tons. A southern Ohio melter is inquiring for 1000 tons.

Chicago—Pig iron shipments for the automotive melt in western Michigan are off more than 30 per cent from last month. Three or four of the automotive foundries are producing at a fair rate for a new low priced car. More interest has been shown in the last few days in requirements for fourth quarter than in piecing out third quarter. The price of $17.50, Chicago furnace, prevails for the base grades in spot sales and the few forward orders that appear.

Several hundred tons of silvery iron now being salvaged from the upper lake region, part of a cargo lightered a year ago, now is being offered here at sacrifice prices.

St. Louis—While shipments of pig iron to consumers in this district are holding up fairly well, new business has fallen to insignificant proportions. Aside from a few carload lots, amounting to less than 1200 tons, new buying was at a standstill in the past week. The melt is slightly below the June rate. Offerings from all producing districts are in liberal volume but there is virtually no shading of prices.

Birmingham, Ala.—Demand shows no improvement, all orders being in small lots. Melters in this territory indicate no change in buying policy in the near future.

Toronto, Ont. — Seasonal slackness has brought on a more pronounced lull in buying in the Canadian markets. Sales are restricted to a few single carloads. Production of foundry and malleable grades has improved slightly.

Ferroalloy Shipments Slow; Sales Lacking

Ferroalloy Prices, Page 62

Pittsburgh—Shipments of ferroalloys continue at a low level and July business is expected to be the lightest of any month for the year. Specifications reflect the reduced rate of steelmaking operations, consumers carrying little stock. New business in the spot market is almost entirely lacking. Prices are unchanged, ferromanganese continuing at $89.79 delivered, with spiegeleisen $30, furnace.

New York—Special ferroalloys are quiet, reflecting the slack operations. Prices of silicon, vanadium and chrome have been unchanged and steady. Tungsten ore is dull and nominal, about $3.25 to $3.50 a short ton unit, equal to $11.25 to $11.50, duty paid. Domestic ore is nominal at $12.

Semifinished Sales Light; Prices Steady

Semifinished Prices, Page 62

Pittsburgh — Semifinished steel consumers are operating with little stock and orders generally represent immediate requirements. Little change is noted in volume which is light. Prices are unchanged on new business, rerolling billets, slabs and sheet bars continuing $29 with forging billets $35 to $36 and wire rods $35.

Philadelphia—As most consuming plants are operating only two days a week billet sales continue light. Rerollers are unchanged at $29, Pittsburgh, and forging quality, $34.

Youngstown, O.—Few billets and sheet bars are moving from producing mills to consumers, due to the restricted rates of operations of strip and sheet mills. These rates continue to taper each week or develop new irregularities. A bit of a flurry in line pipe demand the latter part of last week brought in an additional bessemer converter and also a couple of additional openhearths, but this dwindled in a few days and valley works now are about 38 per cent active. Billets, sheet bars and slabs bring $29, Youngstown and Cleveland.

Cleveland—Demand for sheet bars, billets and slabs continues quiet. Though $29, base, Cleveland and Youngstown, O., is the nominal quotation on all three grades, it is understood that offers at $28 have been made, and sheet bars sold at the lower figure. The leading merchant producer here still operates five of its 14 open hearths.

Metalcraft Heater Corp., Grand Rapids, Mich., has increased its capital from 100,000 to 200,000 shares of no par value.

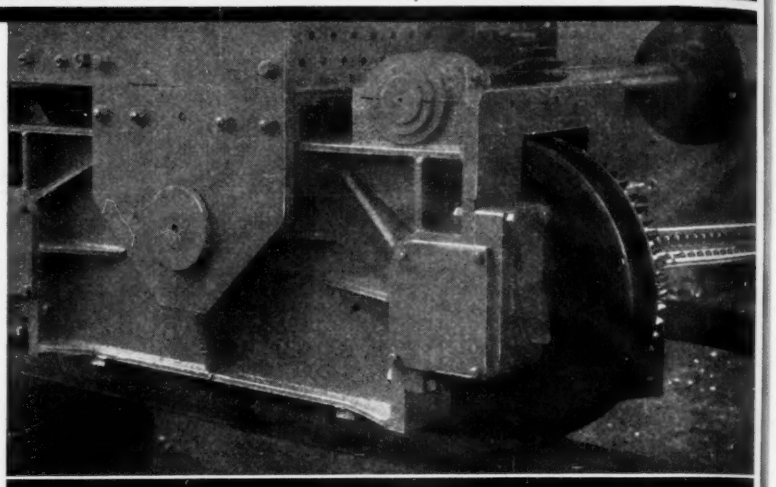
INDUSTRY

is recognizing the importance of *Structural Steel* in machine construction

NEVER before has so much attention been focused on machine design as is demanded by today's highly competitive sales conditions. Of real significance, then, is the rapidly increasing popularity of the use of riveted and welded structural steel in the manufacture of machinery, particularly for base and frame construction.

A most important factor is the economy of structural steel. A small stock of selected rolled steel shapes, available for instant use and capable of being fabricated into an endless variety of machine parts, involves a minimum outlay of capital. The saving in time between design and delivery is another item of no small importance. Improvement of the product itself is yet another advantage. Rolled Steel is homogeneous, tough, and its strength is high in proportion to its weight and bulk.

CB Sections are ideally adapted to this modern method of machine construction because of their unique advantages. Carnegie Engineers are at your service at all times and will gladly consult with you regarding the use of structural steel in machine construction.



Welded steel trolley frame for 50-Ton 15-Ton Auxiliary 62′ 5″ Span Crane, manufactured by The Cleveland Crane & Engineering Company, Wickliffe, Ohio. Frame is of welded structural steel construction with the exception of housings for bearings.

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CARNEGIE STEEL COMPANY·· PITTSBURGH PA·

Subsidiary of United States Steel Corporation

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Scrap

Decline Seems Checked and Some Advances Made—Moderate Buying in Some Markets

Chicago—Reports that important purchases of steel scrap are materializing from buyers seeking to benefit by low prices, are said to have originated from the fact that a number of melters out of the market for the last three months or more have been making moderate purchases. Sale of 2000 tons of railroad malleable at a low price to a local melter has been reported, without definite details. A cargo of about 4000 tons of cast borings left the East Chicago docks the first of the week for the Buffalo market, the first shipment to be moved from this district by boat. This shipment clears out stocks that had accumulated at the docks, and the sale is said to have been above the Chicago delivered market. Prices are nominal.

Iron and Steel Scrap Prices

Corrected to Tuesday noon. Gross tons delivered to consumers, except where otherwise stated

HEAVY MELTING STEEL

Birmingham	$8.00 to $9.00
Boston, dealers	4.50 to 5.00
Buffalo, No. 1	9.00 to 9.50
Buffalo, No. 2	7.50 to 8.00
Chicago	8.50 to 9.00
Cinn., deal.	7.50 to 8.00
Cleve., No. 1	8.50 to 9.00
Cleve., No. 2	8.00 to 8.25
Det., No. 1 deal.	7.50 to 8.00
Det., No. 2 deal.	6.00 to 6.50
E. Pa. del. mill	8.00 to 9.50
N. Y. deal. R. R.	5.00 to 6.50
N. Y. deal. No. 2	3.50 to 4.00
N. Y. deal. yd.	4.00 to 4.50
Pitts., No. 1	10.50 to 11.00
St. L. No. 1 sel.	8.25 to 8.75
Federal, Ill.	8.00 to 8.50
Granite City, Ill.	7.00 to 7.50
Valleys, No. 1	10.50 to 11.00

COMPRESSED SHEETS

Buffalo, dealers	7.50 to 8.00
Chicago	7.00 to 7.50
Cleveland	8.00 to 8.50
Detroit, dealers	7.00 to 7.50
E. Pa. new mat.	8.00 to 9.00
Pittsburgh	10.50 to 11.00
Valleys	10.00 to 10.50

BUNDLED SHEETS

Buffalo	5.50 to 6.00
Cinci., deal.	6.75 to 7.25
Cleveland	6.50 to 7.00
Eastern Pa.	6.50 to 7.00
Pittsburgh	8.00 to 8.50
St. Louis	5.50 to 6.00

SHEET CLIPPINGS LOOSE

Chicago	4.00 to 4.50
Cincinnati	4.00 to 4.50
Detroit, dealers	4.00 to 4.50
St. Louis	5.50 to 6.00

STEEL RAILS SHORT

Birmingham	11.00 to 11.25
Boston, dealers	3.00 to 4.50
Buffalo	12.00 to 12.50
Chicago (3 ft.)	10.00 to 10.50
Chicago (2 ft.)	10.75 to 11.25
Cinci., deal.	13.00 to 13.50
Detroit, deal.	11.00 to 11.50
Pitts. (open-hearth, 3 ft. and less)	12.50 to 13.00
St. Louis	12.00 to 12.50

STOVE PLATE

Birmingham	7.00 to 7.50
Boston, con.	5.00 to 5.50
Buffalo	7.75 to 8.00
Chicago, net	7.00 to 7.50
Cinci., deal. net	4.50 to 5.00
Det., net deal.	4.00 to 4.50
Eastern Pa.	7.50 to 8.00
N. Y., deal. mill	4.50 to 4.75
St. Louis	7.00 to 7.50

COUPLERS, SPRINGS

Buffalo	11.25 to 11.75
Chicago	9.75 to 10.25
Eastern Pa.	13.00
Pittsburgh	12.75 to 13.25
St. Louis	8.75 to 9.25

ANGLE BARS—STEEL

Chicago	9.25 to 9.75
St. Louis	8.25 to 8.75

LOW PHOSPHORUS

Buffalo, billets and bloom crops	12.75 to 13.25
Cleveland bil. and bloom crops	12.00 to 12.50
Eastern Pa.	13.50 to 14.00
Pittsburgh billet bloom crops	14.50 to 15.00
Pitts. sheet bar crops	13.50 to 14.00

FROGS, SWITCHES

Chicago	8.50 to 9.00
St. Louis	9.50 to 10.00

SHOVELING STEEL

Chicago	8.50 to 9.00
Cleveland	6.50 to 7.00
St. Louis	8.00 to 8.50

RAILROAD WROUGHT

Birmingham	8.00 to 8.50
Boston, dealers	8.00 to 8.50
Buffalo, No. 1	7.00 to 7.50
Buffalo, No. 2	9.00 to 9.50
Chicago, No. 1	8.25 to 8.70
Chicago, No. 2	8.50 to 9.00
Cinci., No. 2	7.50 to 8.00
Eastern Pa.	10.00
N. Y., No. 1, deal.	9.00 to 9.50
Pitts., No. 2	10.50 to 11.00
St. Louis, No. 1	5.25 to 5.75
St. Louis, No. 2	8.00 to 8.50

SPECIFICATION PIPE

Boston	5.00 to 5.25
Eastern Pa.	10.00 to 10.50
N. Y., deal.	5.50 to 6.00

BUSHELING

Buffalo, No. 1	7.50 to 8.00
Chicago, No. 1	6.75 to 7.25
Cinn., No. 1 dl.	6.00 to 6.50
Cinn., No. 2	3.50 to 4.00
Cleve., No. 2	6.25 to 6.75
Det., No. 1 new deal.	5.50 to 6.00
St. L., No. 1	6.00 to 6.50
Val. new No. 1	9.50 to 10.00

MACHINE TURNINGS

Birmingham	4.50 to 5.00
Boston, dealers	1.50 to 1.75
Buffalo	4.75 to 5.00
Chicago	3.75 to 4.25
Cinn., deal.	3.75 to 4.25
Cleveland	5.00 to 5.50
Detroit	3.50 to 4.00
Eastern Pa.	5.00 to 6.00
N. Y., deal.	2.00 to 2.50
Pittsburgh	7.50 to 8.00
St. Louis	3.50 to 4.00
Valleys	8.00 to 8.25

BORINGS AND TURNINGS For Blast Furnace Use

Boston	1.50 to 1.75
Buffalo	5.75 to 6.25
Cinn., deal.	4.50 to 5.00
Cleveland	6.50 to 7.00
Detroit, deal.	4.25 to 4.75
Eastern Pa.	5.50
N. Y., deal.	2.00 to 2.50
Pittsburgh	7.50 to 8.00

CAST IRON BORINGS

Birming., chem.	12.50 to 13.00
Birming., plain	4.50 to 5.00
Boston, chem.	7.00 to 7.25
Boston, deal.	1.50 to 1.75
Buffalo	5.75 to 6.25
Chicago	3.75 to 4.25
Cinn., deal.	3.75 to 4.25
Cleveland	6.50 to 7.00
Detroit, deal.	4.25 to 4.75
Eastern Pa.	5.00 to 6.00
E. Pa., chem.	10.50 to 11.00
N. Y., deal.	2.00 to 2.50
Pittsburgh	7.50 to 8.00
St. Louis	5.00 to 5.50

PIPE AND FLUES

Cinn., deal.	6.00 to 6.50

RAILROAD GRATE BARS

Buffalo	6.50 to 7.00
Chicago, net	5.75 to 6.25
Cincinnati	5.50 to 6.00
Eastern Pa.	7.50 to 8.00
N. Y., deal.	5.00 to 5.50
St. Louis	6.00 to 6.50

FORGE FLASHINGS

Boston, deal.	5.00 to 5.25
Buffalo	7.50 to 8.00
Cleve. ov. 10 in.	7.00 to 7.50
Detroit	6.00 to 6.50

FORGE SCRAP

Boston, del.	5.00 to 5.25
Chicago	11.50 to 12.00
Eastern Pa.	9.00 to 10.00

ARCH BARS, TRANSOMS

Chicago, net	10.50 to 11.00
St. Louis	8.25 to 8.75

AXLE TURNINGS

Boston, deal.	6.75 to 7.00
Buffalo	7.50 to 8.00
Chi., steelworks	7.50 to 8.00
Cleveland	6.75 to 7.00
Eastern Pa.	8.00 to 9.00
Pittsburgh	9.00 to 9.50
St. Louis	7.00 to 7.50

STEEL CAR AXLES

Birmingham	12.50 to 13.00
Boston, ship. pt.	11.00 to 12.00
Buffalo	14.50 to 15.00
Chicago	12.90 to 13.45
Eastern Pa.	18.50 to 19.50
St. Louis	13.00 to 13.50

SHAFTING

Bos., ship. pt.	10.00 to 10.50
Chicago	9.55 to 10.10
N. Y., deal.	12.00 to 13.00
St. Louis	9.50 to 10.00
E. Penna.	18.00

CAR WHEELS

Birming., iron	9.00 to 10.00
Boston, iron	14.00 to 14.50
Buffalo, iron	10.50 to 11.00
Buffalo, steel	10.75 to 11.25
Chicago, iron	10.00 to 10.50
Chi. rolled steel	10.00 to 10.50
Cincinnati, iron	10.50 to 11.00
E. Pa. steel	12.00
E. Pa. iron	12.50 to 13.00
Pitts. iron	10.50 to 11.00
Pitts., steel	12.75 to 13.25
St. Louis, iron	7.75 to 8.25
St. Louis, steel	10.00 to 10.50

NO. 1 CAST SCRAP

Birmingham	9.50 to 10.00
Buffalo (mach.)	9.00 to 10.00
Boston, textile	10.00 to 10.50
Chicago, mach.	9.80 to 10.35
Chi., railroad	8.70 to 9.25
Chicago, agri.	8.40 to 8.95
Cinn., mach. cup., gross	12.25 to 12.75
Cleve. cupola	10.00 to 10.50
Det., net deal.	8.00 to 8.50
E. Pa. cupola	12.50 to 13.00
N. Y. cup. deal.	7.00 to 7.50
N. Y., del. local foundries	12.00
Pitts., cupola	10.00 to 10.50
San Fran., del.	13.50 to 14.00
Seattle	7.50 to 8.00
St. L. No. 1 ma.	9.00 to 9.50
St. L. No. 1	8.25 to 8.75

HEAVY CAST

Boston	10.50 to 11.00
Bos. mach. cast.	11.50 to 12.50
Buffalo, break.	6.50 to 7.00
Cleve., break	6.00 to 6.50
Detroit, auto, net deal.	10.50 to 11.00
Det., break., dl.	5.50 to 6.00
Eastern Pa.	10.00 to 10.50
N. Y. No. 1 dl.	7.50 to 8.00
N. Y., break. dl.	6.50 to 7.00
Pittsburgh	8.00 to 8.50

MALLEABLE

Boston R. R.	13.00 to 13.50
Buffalo	10.00 to 10.50
Chicago, agri.	9.00 to 9.50
Chicago, R. R.	9.50 to 10.00
Chicago, agri.	8.25 to 8.75
Chicago, R. R.	9.75 to 10.25
Cleveland, rail	10.00 to 10.50
Det. auto deal.	10.50 to 11.00
St. Louis, rail	8.00 to 8.50

RAILS FOR ROLLING 5 feet and over

Birmingham	10.50 to 11.00
Boston	7.50 to 8.00
Buffalo	10.00 to 10.50
Chicago	10.50 to 11.00
Eastern Pa.	11.50 to 12.00
New York	7.00 to 7.50
St. Louis	10.50 to 11.00

LOCOMOTIVE TIRES

Chicago, cut	11.50 to 12.00
St. L., No. 1	10.50 to 11.00

LOW PHOS. PUNCHINGS

Chicago	10.75 to 11.25
Buffalo	12.50 to 13.00
Eastern Pa.	13.00 to 14.00
Pittsburgh	13.50 to 14.00

nal in view of light bookings. Heavy melting steel is quoted $8.50 to $9. No trend is discernible, but the market remains highly sensitive.

Boston—While there has been a slightly improved price situation for some scrap grades including heavy melting steel rails, machine shop turnings, steel mill borings and mixed borings and turnings, the firmer situation resulted from a higher range at Pittsburgh and has no bearing on business in this market. Conditions hold about the same as for six weeks, with the American Steel & Wire Co. at Worcester out of the market altogether.

New York—Scrap is slightly more active at firmer prices. Mills are taking more material with $8.50 paid, delivered Claymont, and $9, eastern Pennsylvania, for No. 1X. No. 2 has moved to Phoenixville on a 50-cent advance to $7.50. The Florence, N. J., foundry continues to buy cast grades at unchanged prices which are firm. Dealers' buying prices on several grades are 50 cents higher, including No. 1. No. 1 machinery cast, heavy breakable cast and stove plate, foundry, are firmer.

Philadelphia—Following a slightly higher tendency in No. 1 heavy melting steel No. 2 has advanced 50 cents to a range of $7.50 to $8, delivered consumer. Sales have been made for Phoenixville, Pa., at the outside figure. Heavy breakable cast is slightly higher and chemical borings are down $1. Trading is light.

Buffalo—Few transactions in steel and iron scrap have occurred this week, although small tonnages are being obtained by a large concern which is continuing to offer $9 for No. 1 and $7.50 for No. 2 heavy melting steel. It is estimated that 100,000 tons of steel scrap have been moved into Buffalo this season over the barge canal.

Pittsburgh — The steel and iron scrap market remains firm but prices generally are no higher. Some small lot buying of heavy melting steel has been done at $10.75 and $11, leaving this grade unchanged. Supplies are light and railroad offerings are small. The Pennsylvania railroad list contains 30,000 net tons. Most grades are quiet and prices are partly nominal but strong.

Cleveland—Activity in iron and steel scrap continues slow. American Steel & Wire Co. continues to receive material on an order for selected No. 1 steel placed recently at $9.75. Dealers are paying $9.50 against this contract. Otis Steel is receiving some blast furnace material. Otherwise movement is restricted to out-of-town points. Demand for turnings for delivery at Warren and Youngstown has resulted in an advance of about 50 cents a ton in this grade.

Detroit—Current scrap offerings continue with one exception the smallest in several years. It is entirely probable that lists for August will bring higher prices though this week quotations are unchanged and the market is firm.

Cincinnati—In face of dull demand, dealers in iron and steel scrap believe the market will resist further reductions in anticipation of an upturn in the fall. Scrap is now moving on odd lot orders and light specifications from some mills. Quotations are nominally unchanged.

St. Louis—There has been no increase in activity in steel and iron scrap but the market continues steady with some grades firm.

Purchasing by mills and foundries is in small lots for prompt delivery, and the total is not large. Exchanges between dealers are fairly active for completing contracts or acquiring material for laying down in yards. Further moderate accretions to yard stocks have taken place during the past two weeks.

Birmingham, Ala.—The market for steel and iron scrap is quiet with no prospects of early recuperation. Dealers have plenty of stock and purchasers are practically naming the price. Heavy melting steel continues around $9.

Toronto, Ont.—New business is lacking in the iron and steel scrap markets. Mills buy only when special grades are desired for immediate use. Sales of heavy melting steel and turnings are negligible. Demand for iron scrap is spotty. Some call for machinery cast and malleable scrap appeared during the past few days, but orders were small. Competition for new business is keen and some shading is being done. Dealers are still out of the market and are supplying consumers from stock. Prices are unchanged.

Canadian Scrap

Dealers' Buying Prices

MONTREAL

Per Gross Ton

Iron axle	$11.00
Steel axles	10.00
Car wheels	8.00
Stove plate	8.00
Wrought pipe	2.00
Turnings	2.00
Heavy melting steel	6.00

TORONTO

Steel axles	7.00
Iron axles	7.00
Heavy melting steel	7.00
Turnings	2.00
No. 1 mach. cast (net)	9.00
Malleable (net)	7.00

Dam Supplies Awarded

Washington—American Car & Foundry Co. has been awarded contract for props, hinged frames, shafts and horses for dams 25, 27 and 39, Ohio river, on combined bids of $19,318.27, the work being under the United States engineer, Huntington, W. Va.

Coke

Contract Shipments Continue in Small Volume—Furnace and Foundry Requirements Light

COKE PRICES, PAGE 62

Pittsburgh — Beehive coke shipments on contracts are fairly steady, but at a low rate. Little new business is appearing. Occasional spot buying of furnace coke is noted for nonmetallurgical purposes, with $2.40 the usual market for the standard grade. Foundry coke prices are steady.

Boston—Conditions in the coke market have not changed in the past week. Foundries have enough fuel due them to last for some time.

Cincinnati—Shipments of by-product foundry coke this month will not reach the tonnage of June. The melt throughout this district is believed at its low mark. Prices are unchanged.

Chicago — By-product foundry coke shipments to the western Michigan automotive territory are off about 60 per cent from last month. Production is at about 50 per cent of capacity. Prices are unchanged.

St. Louis.—Demand for coke continues to lag, shipments during the past week having been at the lowest rate in a number of months. Some implement makers and stove foundries have asked for deferred delivery, and specifications by jobbing plants are irregular.

Birmingham, Ala—Coke production is being held down as demand still is slow. About 2000 tons of Alabama coke is moving to New Jersey and other Atlantic coast points.

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In the Wickwire Spencer Rope Shops the final inspector controls the reeling of the rope. This compels him to focus his attention on every inch. It may seem an unduly costly procedure in view of the meticulous care employed and chemical and physical tests made by this company in every process of rope making from smelting ore to actual fabrication. It is the Wickwire Spencer way of being sure every piece of Wire Rope it ships is perfect. Wickwire Spencer Wire Rope does give satisfaction.

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Send for our book. It is free and will prove of great value in selecting.

Pacific Coast

Routine Tonnages Keep California Markets Fairly Active—Most Tonnages Are Moderate—Northwest Continues Dull—Prospective Projects Promise Better Lettings in Near Future

San Francisco—(*By Air Mail*)—Movement of steel products on the Pacific Coast during the past ten days has improved and some fair sized tonnages of cast iron pipe, reinforcing steel bars and structural steel shapes have been placed. In addition a number of new structural inquiries have come out for figures or are about to be released. No change in price has occurred and weakness continues to prevail.

Bars, Shapes and Plates

Pacific Coast Steel Corp. has secured 110 tons of reinforcing steel bars for a dam for San Francisco. The Soule Steel Co. was awarded 520 tons for a warehouse in Oakland and 280 tons for Pier 38, San Francisco. Gunn, Carle & Co. secured 110 tons for a stadium in Berkeley for the University of California. Bids have been opened on 111 tons for Los Angeles county, and on 100 tons for a hospital in Reno, Nev. Prices in the San Francisco district on warehouse material remain unchanged at 2.60c, base, on carload lots. Los Angeles quotations hold at 2.50c, base.

Coast Pig Iron Prices

Utah basic	$22.00 to 24.00
Utah foundry	22.00 to 24.00
*German	24.25
*Indian	22.00 to 24.00

*C.i.f. duty paid.

No plate awards of importance were reported this week. Bids have been opened on 250 tons for a welded steel pipe line for the Vista irrigation district, Vista, Calif. Prices continue to range between 1.90c and 2.00c, c.i.f.

McClintic-Marshall Co. booked 270 tons of structural steel for an apartment at Fillmore and Sutter streets, San Francisco, 860 tons for a post office in Salt Lake City and 520 tons for the Health Center, Polk and Grove streets, San Francisco. The United States Steel Corp. secured 212 tons of plain material for the Mare Island and Puget Sound navy yards. Pending business now exceeds 112,000 tons. Bids have been opened on 500 tons for an apartment on Santa Barbara street, Los Angeles, and on 160 tons for an apartment on Sutter street, San Francisco. Plans are being prepared for a glass factory in Alameda, Calif., that will require 1000 tons. Post offices at Glendale and Sacramento, Calif., call for 400 tons and 600 tons, respectively. Plain material ranges between 2.05c and 2.15c, c.i.f.

Other Finished Material

Movement of sheet material continues to be confined, for the most part, to small lots. B. W. Norton Mfg. Co., Oakland, Calif., secured the award for 2,225,000 sets of license plates for the state of California. The Columbia Steel Co. will furnish 1385 tons of No. 24 gage hot-rolled annealed sheets for these plates. No change in prices is noted. No. 10 gage blue annealed sheets are quoted at 2.50c, c.i.f., No. 24 gage hot-rolled annealed holds at 3.00c, and No. 24 gage galvanized sheets at 3.50c, c.i.f.

The East Bay municipal utility district, Oakland, Calif., awarded two lots of cast iron pipe this week. The United States Pipe & Foundry Co. secured one lot of 750 tons of 16-inch pipe and 635 tons of 6-inch on the second project for the same city. R. D. Wood & Co. secured 525 tons of 8-inch and the Pacific States Cast Iron Pipe Co. booked 716 tons of 2 and 4-inch pipe for Oakland. The latter company also secured 127 tons of 6-inch for Riverside, Calif.

Demand Is Below Normal

Seattle—Demand for iron and steel products continues slack and below normal in the Pacific Northwest but the outlook is brighter, with several important projects awarded or pending. General business sentiment is better with increased lumbering operations and prospects for a fair seasonal export movement of forest and agricultural products.

Interest was centered this week on opening of bids for the $1,675,000 federal building at Seattle, involving more than 4000 tons of structurals and other steel. Murch Bros., St. Louis, are low bidders and the award is pending.

University of Washington will receive bids July 28 for a $225,000 oceanographic building, which will be of distinctive type and equipped with special refrigeration, plumbing, pumps, tanks and laboratories. It will be the only structure of its kind in the world.

The foundry situation is unchanged with operations at low ebb and buying of pig iron and coke restricted to small tonnages. Prices have not changed.

Bars, Plates and Shapes

Mill prices are steady but have had no recent test. Local steel mills are closed this month but Pacific Coast Steel Co. open hearth furnaces will resume next month. No important tonnages of concrete bars are up for figures and there is little call for merchant bars. Contracts for two state highway bridges in Lewis and Whitman counties, 118 tons of reinforcing bars, have gone to unnamed interests.

The only plate jobs pending are at Tacoma where several bids are either under consideration or invited for furnishing between 750 and 1000 tons of steel pipe, 52 and 63-inch, for replacement of the city's Green River gravity water line. The total cost is estimated at $185,000. Steel, wood stave and concrete manufacturers are contending for the largest contract. Additional bids will be received Aug. 3 for 3221 feet of 52-inch steel pipe and appurtenances.

Local fabricators have cleaned up work in hand and the immediate future seems to hold small promise as few jobs of importance are up. The largest pending fabricating job is 4000 tons involved in the superstructure of the local federal building. Stuart Cameron and W. C. Dittmars, Vancouver, B. C., are seeking government permission to erect a $2,700,000 steel span above Port Mann on the Fraser River, proposed as a toll bridge.

Finished Materials

Business continues quiet with sales confined to small tonnages. Prices are demoralized and nothing has been done to strengthen the situation. Portland is also operating on an open price basis. Business this month is less than in June and is in smaller volume than usual at this season.

Yakima, Wash., has $200,000 available for water system improvements which will involve eight miles of 8-inch and seven miles of 6-inch cast iron pipe, hydrants and other accessories. Plans are being drawn but the date for receiving bids has not been announced. American Cast Iron Pipe Co., through R. C. Polk, Seattle, has closed for 250 tons of 16-inch monocast for Wenatchee, Wash. Godfredson & Tetz, West Lynn, Oreg., have the general award for the water system at La Conner, Wash., involving 125 tons of 6 and 8-inch steel pipe and about 50 tons of 4 and 6-inch cast iron. Sub-contracts are pending.

The scrap market shows no activity. The volume of business is small and prices exceptionally weak. Local mills have done no buying this month but will probably be interested in August when operations are resumed.

Steel, Wrought and Cast Iron Pipe, and Tubing

Welded Iron, Steel Pipe

Base Price $200 Ton

Base Discounts on steel pipe, Pittsburgh and Lorain, O., to jobbers in carloads. Indiana Harbor, Ind., and Evanston, Ill., 2 points less. Chicago del., 2½ points less. Wrought pipe, Pittsburgh base.

BUTT WELD

	Steel			Iron	
In.	Blk.	Gal.	In.	Blk.	Gal.
½	58	44½	½	23	5
¾	62	50½	¾	28	11
1—3	64	52½	1—1¼	31	15
			1½—2	35	18

LAP WELD

2	57	45½	2	23	9
2½—6	61	49½	2½—3½	28	13
7—8	58	45½	4—6	30	17
9—10	56	43½	7—8	29	16
11—12	55	42½	9—12	26	11

BUTT WELD

Extra strong, plain ends

½	55	44½	¼ & ⅜	+13	+48
¾	60	49½	½	23	7
1—1½	62	51½	¾	28	12
2—3	63	52½	1—2	34	18

LAP WELD

Extra strong, plain ends

2	55	44½	2	29	13
2½—4	59	48½	2½—4	34	20
4½—6	58	47½	4½—6	33	19
7—8	54	41½	7—8	31	17
9—10	47	34½	9—12	21	8
11—12	46	33½			

To large jobbers these discounts on steel pipe increased on black by 1 point and two discounts of 5 per cent; on galvanized by 1½ points with two 5 per cents. Direct mill shipments, base, 5 and 2½. On iron pipe large jobbers obtain additional discount of 1 point with 5 and 2½ per cent on black and galvanized.

BOILER TUBES

Carload Discounts, f. o. b. Pittsburgh

Lap Welded Steel		Charcoal Iron	
2—2¼	38	1¾	8
2½—2¾	46	2—2¼	13
3	52	2½—2¾	16
3¼—3¾	54	3	17
4	57	3¾—3½	18
4½—6	46	4	20
1½	1	4½	21

On lots of a carload or more, above base discounts subject to preferential of two 5 per cent discounts on steel and 10 per cent on charcoal iron. Smaller quantities subject to following modifications from base discounts.

Lap Welded Steel—Under 10,000 pounds, 6 points under base and one 5 per cent; on 10,000 pounds to carload, 4 points under base and one 5 per cent; on 10,000 pounds to carload, 4 points under base and two 5 per cents. Charcoal Iron—under 10,000 pounds, 2 points under base; on 10,000 pounds to carload, base and one 5 per cent.

STANDARD COMMERCIAL SEAMLESS BOILER TUBES

COLD DRAWN

1 inch	61	3	46
1¼—1½	53	3¼—3½	48
1¾	37	4	51
2—2¼	32	4½, 5, 6	40
2½—2¾	40		

HOT ROLLED

2—2¼	38	3¼—3½	54
2½—2¾	46	4	57
3	52	4½, 5, 6	46

Subject to 5 per cent supplementary discount for carload lots. On less than 10,000 pounds, base discount reduced 6 points. On 10,000 pounds to carload, base discount reduced 4 points and one 5 per cent allowed. No extra for lengths up to and including 24 feet. Sizes smaller than 1 inch and lighter than standard gage to be held at mechanical tubes list and discount. Intermediate sizes and gages not listed take price of next larger outside diameter and heavier gage.

Seamless Tubing

Cold drawn; f.o.b. mill discounts

Random lengths over 5 ft. 55%
Selected lengths, 1—18 ft. 53%

Cast Iron Water Pipe

Class B Pipe—Per Net Ton

Six-inch and over, Bir. ....$35.00 to 36.00
Four-inch, Birmingham .... 39.00 to 40.00
Four-inch, Chicago ..... 45.00 to 47.00
Six to 24-inch, Chicago..... 42.00 to 44.00
Six-inch and over, N. Y..... 32.50 to 34.50
Four-inch, New York ..... 38.50 to 39.50
Stand. fittings, Bir. base.... $100.00

Six to 24-inch, base; over 24-inch plus $20; 4-inch, plus $10; 3-inch plus $20; gas pipe fittings, $5 higher. Class A pipe $4 higher than Class B.

Warehouse Quotations at Leading Centers, in Cents Per Pound

(All Philadelphia prices subject to quantity differentials except reinforcing and Swedish bars)

STEEL BARS

Baltimore	3.00c
Boston	3.265c
Buffalo	3.00c
Chattanooga	3.00c
Chicago	2.75c
Cincinnati	3.00c
Cleveland	2.75c
Detroit	2.85c
Houston	3.00c
Los Ang.	3.40c
New York‡(d)	3.10c
Philadelphia	2.60c
Pittsburgh	2.60c
Portland	3.15c
San Frans.	2.40c
Seattle	3.00c
St. Louis	3.00c
St. Paul	3.00c
Tulsa	3.50c

IRON BARS

Baltimore	3.25c
Boston	3.265c
Buffalo	3.15c
Chattanooga	3.00c
Chicago	2.75c
Cincinnati	3.00c
Detroit	2.85c
New York‡(d)	3.10c
Philadelphia	2.60c
St. Louis	3.00c
Tulsa	3.50c

REINFORC. BARS

Baltimore	2.50c-3.31c
Boston	3.265c
Buffalo	2.95c
Chattanooga	3.00c
Cincinnati	3.00c
Cleveland	2.10-2.25c
Detroit	2.85c
Houston	3.00c
Los Ang. cl.	2.40c
Los Ang. lcl.	2.70c
New York	2.65c-3.10c
Phila.	2.40c-3.00c
Pittsburgh	2.75c
San Fran. cl.	2.30c
San Fran. lcl.	2.50c
Seattle	3.00c
St. Louis	3.15c
Tulsa	3.50c
Young.	2.30c-2.60c

SHAPES

Baltimore	3.00c
Boston	3.365c
Buffalo	3.25c
Chattanooga	3.20c
Chicago	3.00c
Cincinnati	3.25c
Cleveland	2.95c
Detroit	3.10c
Houston	3.25c
Los Ang.	3.40c
New York(d)	3.10c
Philadelphia	2.50c
Pittsburgh	2.85c
Portland	3.15c
San Fran.	2.40c
Seattle	3.00c
St. Louis	3.25c
St. Paul	3.10c
Tulsa	3.75c

PLATES

Baltimore	3.00c
Boston	3.365c
Buffalo	3.25c
Chattanooga	3.20c
Chicago	3.00c
Cincinnati	3.25c
Cleveland, ¼-in. and thicker	2.95c
Clev., 3/16-in.	3.20c
Detroit	3.10c
Det., 3/16-in.	3.10c
Houston	3.00c
Los Angeles	3.40c
New York(d)	3.30c
Philadelphia	2.50c
Phila. floor	5.10c
Pittsburgh	2.85c
Portland	3.15c
San Fran.	2.40c
Seattle	3.00c
St. Louis	3.25c
St. Paul	3.10c
Tulsa	3.75c

NO. 10 BLUE

Baltimore	3.25c
Boston	3.915c
Buffalo	3.50c
Chattanooga	3.50c
Chicago	3.20c
Cincinnati	3.30c
Cleveland	3.00c
Detroit	3.35c
Houston	3.90c
Los Ang.	3.95c
N. Y. (d)	3.00c-3.40c
Portland	4.00c
Phila.*† (e)	3.05c
Pitts.**	2.60c to 2.85c
San Fran.	3.65c
Seattle	3.75c
St. Louis	3.45c
St. Paul	3.40c
Tulsa	3.95c

NO. 24 BLACK

Balt.*†	3.50c
Boston	4.70c
Buffalo	3.70c
Chattanooga	3.65c
Chicago	3.55c
Cincinnati	3.75c
Cleveland	3.60c
Detroit	3.50c
Los Ang.	4.70c
New York	3.50c-3.65c
Phila.*†(e)	3.55c
Pitts.**	3.40c
Portland	4.50c
San Fran.	4.15c
Seattle	4.25c
St. Louis	3.80c
St. Paul	3.545c
Tulsa	4.75c

NO. 24 GAL. SHEETS

Balt.*†	4.00c
Boston	5.45c
Buffalo	4.10c
Chattanooga	3.95c
Chicago (local del.)	4.35c
Chicago (outside)	4.35-4.60c
Cincinnati	4.25c
Cleveland	4.00c
Detroit	4.00c
Houston	5.40c
Los. Ang.	5.10c
New York	4.00c-4.10c
Phila.*† (e)	4.00c
Pitts.**	4.00c
Portland	5.00c
San Fran.	4.65c
Seattle	4.75c
St. Louis	4.35c
St. Paul	4.23c
Tulsa	5.10c

BANDS

Baltimore	3.50c
Boston	4.015c-5.00c
Buffalo	3.35c
Chattanooga	3.20c
Chicago	2.95c
Cincinnati	3.20c
Cleveland	3.00c
Det. 3/16-in. & lighter	3.15c
Houston	3.65c
Los Ang.	4.30c
New York(d)	3.40c
Philadelphia	2.90c
Pittsburgh	2.95c
Portland	3.50c
San Fran.	3.75c
Seattle	3.50c
St. Paul	3.75c
Tulsa	3.70c

HOOPS

Baltimore	3.50c
Boston	5.50c-6.00c
Buffalo	3.90c
Chicago	3.50c
Cincinnati	3.75c
Cleveland	3.55c
Det. No. 14 & lighter	3.65c
New York	3.75c
Philadelphia	3.15c
Pittsburgh	3.60c
Seattle	4.90c
St. Paul	3.75c

COLD FIN. STEEL

Rounds & Hexagons

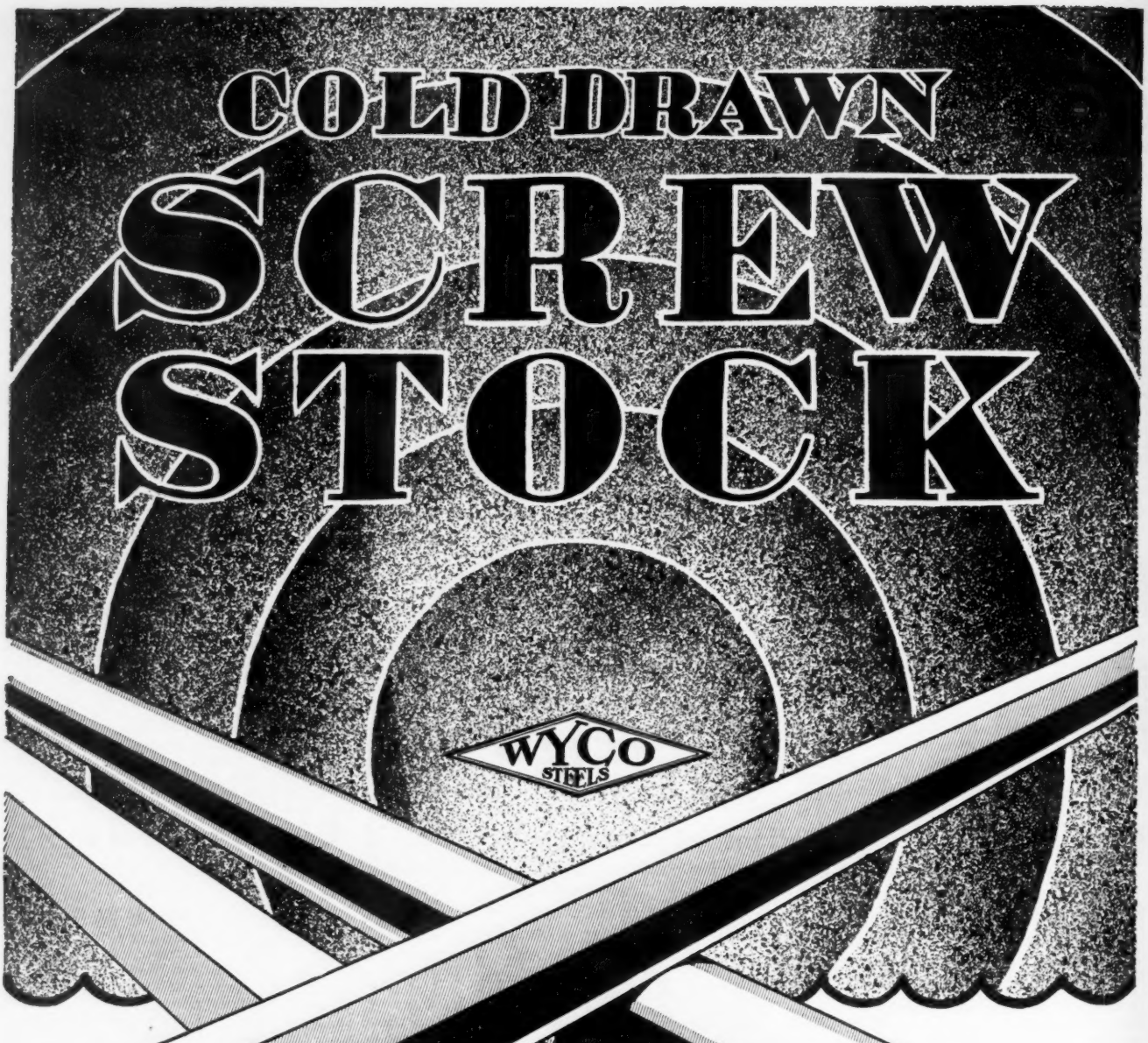
Baltimore (c)	3.30c
Boston	3.50c
Buffalo	3.15c
Chattanooga*	3.75c
Chicago	3.10c
Cincinnati	3.50c
Cleveland	3.10c
Detroit	3.40c
Los Ang. (a)	4.50c
New York	3.40c
Philadelphia*	3.40c
Pittsburgh	3.10c
Portland (a)	4.50c
San Fran.(a)	4.25c
Seattle (a)	4.50c
St. Paul (a)	3.85c
St. Louis	3.35c
Tulsa	4.65c

Flats and squares 50c extra, except Tulsa, where 5.14c is quoted. (a) Rounds, hex. only.

COLD ROLL. STRIP

Boston 0.100 in., 500 lb. lots	5.30c
Buffalo	5.65c
Chicago (soft) (b)	5.65c
Cincinnati	5.80c
Clev. (b)	5.55c
Detroit	5.40c
Phila. (c)	4.55c
New York	4.55c

(b) Net base straightening, cutting, boxing 1 ton or more. (c) Plus mill, size and quantity extras. (d) Minus quant. diff. (e) New mill classif. ‡Domestic bars. *Plus quantity extras. **Less than 25 sheets. *†50 or more bundles.



WYCKOFF DRAWN STEEL COMPANY

General Offices:
FRICK BLDG., PITTSBURGH, PA.

Mills at:
AMBRIDGE, PA. and CHICAGO

Sales Offices:

BOSTON—627 New C. of C. Bldg.
ST. LOUIS—Planters Bldg.
CLEVELAND—Rockefeller Bldg.
BUFFALO—1312 Liberty Bank Bldg.
DAYTON—1128 The 3rd Nat'l Bldg.
MILWAUKEE—288 E. Water St.
DENVER—1037 U. S. Nat'l Bank Bldg.
MINNEAPOLIS—332 Builders Exchange
PHILADELPHIA—133 So. 36th St.

Chicago Office: 3200 So. Kedzie Ave. *Detroit Office and Warehouse: 6189 Hamilton Ave.*

Pacific Coast Representatives: F. H. Currie 309 Pacific Mutual Bldg., Los Angeles, Cal.

Europe

German Situation Retards Business—Leads to Delay in Deciding Steel Entente's Course

London—(*By Cable*)—The European steel entente has been extended provisionally to Aug. 31 owing to the postponement of the meeting of members in Brussels last week. The postponement was due mainly to uncertainty of events in Germany. Reports from the Continent indicate the German "crisis," as it generally is referred to, is reducing the volume of steel business.

Holidays in Great Britain are tending to accentuate slowness in demand. Stocks of pig iron are increasing. Continental iron and steel is offered at slightly lower prices but little business is being transacted, except in sheet bars. The markets for galvanized sheets are weaker; tin plate is firm.

China is inquiring for railroad material. Some locomotive orders have been received from Buenos Aires, and contracts for boilers, from South Africa.

British Steel Users Find Prices Heavy Handicap

Birmingham, Eng.—The decision of the Steel association to maintain prices has caused some disappointment, especially among British shipbuilders, who have been exerting considerable pressure to secure some relief. Steel producers, however, have never held out any hope of being able to meet the wishes of consumers. They would be producing at a loss if they sold at less and in any case they could not meet the level of Continental producers. Now that doubts have been removed as to the policy of the association it is expected that a few orders will be released and already some improvement is noticeable in the Midlands to the extent that structural engineers have sent in some useful inquiries. Some yards have a fair tonnage of work to execute although the aggregate is comparatively small.

Financial disturbances on the Continent are having a depressing effect upon all British metal markets. At the Birmingham meeting only small transactions took place in any department. Northamptonshire pig iron producers are selling at cut rates in the North Eastern district, Scotland and South Wales, in order to compete with the local producer and Continental importers. In the Midlands they are bound to a fixed level arranged by the Central Pig Iron Producers' association. In view of the annual week's vacation due a fortnight hence there is no inclination among customers to lay in stocks. But in any case order books of foundries do not warrant buying.

Continental Material Withdrawn

Merchants offering Continental material in the Birmingham district report the withdrawal of all foreign semis from the market, following a stiffening of prices a week ago. Billets and sheet bars were unobtainable. Small steel bars could be had at £4 12s 6d ($22.38) per ton and, curiously enough, a little less for a small parcel for early delivery. This is, of course, contrary to the usual procedure of the market but it is explained by the fact that Belgian and French producers do not wish to be involved in forward business of any kind owing to the uncertain state of finance and trade on the Continent. They prefer to sell quickly even at a loss, as they are undoubtedly doing. Merchants were unanimous in the view that inquiries are nonexistent among Midland consumers.

Iron producers in Middlesbrough are maintaining the prices that have prevailed since the beginning of the year, despite the fact that they are thus prevented from competing in Scotland and also from selling on any extensive scale in their own district as Midland producers have entered the field in no uncertain fashion. East coast hematite makers have stabilized the price although substantial orders would command concessions.

In the galvanized sheet trade mills are receiving a better inquiry from abroad. Some of it is from South Africa and a little from India. Before the position can be improved at the mills, however, demand must show a distinct advance on the present position. Makers are reluctantly accepting £9 12s 6d ($46.59) for 24 gage under pressure of competition and the desire to keep mills at work.

Current Iron and Steel Prices of Europe

Dollars at Rates of Exchange, July 27	*British* Gross Tons U. K. Ports		*French* Metric Tons Channel Ports		*Belgium and Luxemburg* Metric Tons Channel Ports		*German* Metric Tons Rotterdam or North Sea Port	
Export Prices f.o.b. Ship at Port of Dispatch—By Cable								
PIG IRON		£ s d		£ s d		£ s d		£ s d
Foundry No. 3**.....	$14.22	2 18 6*	$11.79	2 8 6	$11.79	2 8 6	$11.85	2 8 9
Basic-bessemer.....	14.58	3 0 0†	11.18	2 6 0	11.18	2 6 0	13.37	2 15 0
Hematite, Phos. .02-.05	15.31	3 3 0	.....	.....	.....	.....	17.01	3 10 0
SEMIFINISHED STEEL								
Billets.....	$25.52	5 5 0	$15.80	3 5 0	$15.80	3 5 0	$15.80	3 5 0
Wire rods.....	41.31	8 10 0	25.51	5 5 0	25.51	5 5 0	25.51	5 5 0
FINISHED STEEL								
Standard rails.....	$40.10	8 5 0	$31.59	6 10 0	$31.59	6 10 0	$31.59	6 10 0
Merchant bars.....	1.52c	7 0 0	.78c	3 10 6	.78c	3 10 6	.80c	3 12 6
Structural shapes.....	1.68c	7 15 0	.73c	3 6 0	.73c	3 6 0	.75c	3 8 0
Plates.....	1.79c	8 5 0	.91c	4 2 6	.91c	4 2 6	.90c	4 2 0
Sheets, black, 24 gage	1.90c	8 15 0	1.76c	8 0 0	1.76c	8 0 0	1.79c	8 2 6
Sheets, gal., 24 ga. corr.	2.06c	9 10 0	2.20c	10 0 0	2.20c	10 0 0	2.31c	10 10 0
Bands and strips.....	2.06c	9 10 0	.92c	4 3 9	.92c	4 3 9	.94c	4 5 0
Plain wire, base.....	2.06c	9 10 0	1.11c	5 1 3	1.11c	5 1 3	1.11c	5 1 3
Galvanized wire, base..	2.39c	11 0 0	1.36c	6 3 9	1.36c	6 3 9	1.38c	6 5 0
Wire nails, base.....	2.39c	11 0 0	1.13c	5 2 6	1.13c	5 2 6	1.13c	5 2 6
Tin plate, box 108 lb...	$ 3.40	0 14 0	.....	.....	.....	.....	$ 8.26	1 14 0

Domestic Prices at Works or Furnace—Last Reported

			French Francs		Belgian Francs		Renten Marks	
Fdy. No. 3 Pig Iron**	$14.22	2 18 6	$11.76	300(2)	$12.83	460	$17.94	78
Basic pig iron.....	14.58	3 0 0	12.74	325(1)	11.58	415	19.67	85.50
Furnace Coke.....	2.67	0 11 0	5.68	145	5.16	185	4.92	21.40
Billets.....	25.52	5 5 0	19.21	490	17.72	635	25.41	110.50
Standard rails.....	1.79c	8 5 0	1.41c	785	1.57c	1,210	1.32c	127
Merchant bars.....	1.63c	7 10 0	.83c	460	.84c	645	1.33c	128
Shapes.....	1.90c	8 15 0	.99c	550	.81c	625	1.30c	125
Plates.....	1.95c	9 0 0‡	1.26c	700	.98c	755	1.53c	147
Sheets, black, 24 gage	1.90c	8 15 0	2.19c	1,215	1.82c	1,400	1.22c	117
Sheets, gal. 24 ga., corr.	2.12c	9 15 0	2.39c	1,325	1.47c	1,900	3.43c	330
Plain wire.....	2.06c	9 10 0	1.80c	1,000	2.08c	1,600	2.15c	207
Bands and strips.....	2.06c	9 10 0	1.05c	585	1.17c	900	1.54c	148

*Middlesbrough; †Basic; ‡delivered; (1) Basic-bessemer; (2) Longwy. British export furnace coke £0 11s 0d ($2.67) f. o. b. Ferromanganese £17 9s 6d ($84.93) delivered Atlantic seaboard, duty-paid. German ferromanganese £9 0s 0d ($43.74) f. o. b.; **Silicon 2.50-3.00. British quotations are for basic openhearth steel. French, Belgian, Luxemburg, and German are for basic-bessemer steel.

Mill Products

Base price cents per pound f.o.b. mill except otherwise specified. Copper and brass product prices based on 8.00c, Conn., for copper

Sheets	
Yellow brass (high)	15.50
Copper, hot rolled	17.87½
Lead, full sheets (cut ½c more)	8.25
Zinc sheet (100-lb. base)	9.00
Tubes and Pipes	
Seamless yellow brass (high)	20.37½
Seamless copper	20.37½
Rods	
Yellow brass (high, full turnings)	13.75
Naval brass	14.87½
Anodes	
Copper, untrimmed	15.37½
Wire	
Yellow brass (high)	16.00

Old Metals

Dealers' buying prices, cents lb.

No. 1 Composition Red Brass	
New York	4.75 to 5.00
Chicago	4.50 to 5.00
Cleveland	5.00 to 5.50
St. Louis	4.50
Heavy Yellow Brass	
New York	3.00 to 3.25
Heavy Copper and Wire	
New York	5.75 to 6.00
Boston	5.25 to 5.50
Chicago	4.75 to 5.25
Cleveland	5.00 to 5.50
St. Louis	4.75 to 5.00
Composition Brass Borings	
New York	4.25 to 4.50
Yellow Brass Tubing	
Cleveland	3.00 to 3.50
Light Copper	
New York	4.75 to 5.00
Chicago	4.50 to 4.75
Cleveland	4.50 to 5.00
St. Louis	4.50
Light Brass	
Boston	2.00 to 2.25
Chicago	2.75 to 3.00
Cleveland	2.25 to 2.50
St. Louis	2.50 to 2.75
Zinc	
New York	1.25 to 1.50
Cleveland	1.25 to 1.50
St. Louis	1.50
Aluminum	
Clippings, soft, Cleveland	12.50 to 14.00
Clippings, hard, Cleveland	9.00 to 12.00
Borings, Cleveland	4.00 to 4.50
Mixed cast, Cleveland	4.50 to 5.00
Mixed cast, Boston	3.75 to 4.00
Mixed cast, St. Louis	4.00

Secondary Metals

Remelt alumnium No. 12	9.00 to 10.50
Brass ingots, 85-5-5-5	7.87½

Metals

Delay Seen in Business Pickup As Demand Lags—Copper Price Eases but Lead Is Unchanged

New York—Sentiment in nonferrous metals alternates between hopefulness and discouragement. In the past week the latter dominated, though hope was not entirely abandoned, but rather postponed. It is believed good business will be longer in returning than had been thought when markets got their impetus from the early stages of the Hoover debt proposals.

The higher prices reached at that time have been held in lead and zinc, but tin and antimony have lost part of the recovery and copper all of it. Just now the summer lull accentuates the depression, but it is believed seasonal influences will continue and therefore work toward better business as autumn approaches.

Copper—After a few days at 8.00c, Connecticut, about a week ago, the market has sagged to 7.75c. But the lower price interests almost no one, with users well covered on early needs and having no incentive to buy far ahead. Most sellers do not care to go below 8.00c. Recently, some additional curtailment was reported but the market still is dominated by surplus production. Export business the past few days has been negligible.

Zinc—Prime western zinc has eased to 3.87½c, East St. Louis, with a few sellers for prompt shipment. In some cases August might be obtained at this price. In view of dullness, the market has held remarkably well. Production is extremely low and most smelters do not have to push sales. The ore market is steady at $23 a ton.

Tin—Lack of demand has caused the price to decline gradually to a little over 24.00c, off about 2 cents since early in the month. Supplies no longer are accumulating as rapidly as they did, but consumption also has fallen lately.

Lead — New business has been light but prices are steady and backed by greatly improved statistics.

Aluminum—New business is dull but prices continue unchanged. Domestic output is being curtailed.

Distillate Prices Easier; Sulphate Steadier

New York—Sulphate of ammonia prices are steadier after a drop of $4.50 a ton following the break-up of the foreign cartel. The market is still weakened by low priced imports, some material coming in under $25 c.i.f. Reports that negotiations may be resumed toward reorganization of the cartel has had a firming influence.

Distillates also are weak, top figure in the price range having been dropped for benzol, toluol and xylol. Phenol buying is irregular and shows little change. Naphthalene is active.

Coke By-Products

Per Gallon, Producers' Plants, Tank Lots

	Spot
Pure benzol	$0.18
90 per cent benzol	0.18
Toluol	0.27
Solvent naphtha	0.24
Commercial xylol	0.24
Per Pound at Producers' Plants in 250-Pound Drums	
Phenol	0.16 to 0.17
Per Pound at Producers' Plants	
Naphthalene flakes	3.75 to 4.75
Naphthalene balls	4.75 to 5.75
Per 100 Pounds Atlantic Seaboard	
Sulphate of ammonia	$1.375

Quicksilver Price Weak

New York—Quicksilver is slow and weak, with quotations uncertain around $89 to $90 a flask. Some lower prices for large lots have been heard of.

Prices of the Week, Cents a Pound

	Copper—Electro delivered	Copper—Lake delivered	Copper—Casting refinery	Straits Tin—New York Spot	Straits Tin—New York Futures	Lead N. Y.	Lead East St. L.	Zinc St. L.	Aluminum 98-99%	Spot Antimony	Ingot Nickel
July 22	7.87½	8.12½	7.75	24.50	24.75	4.40	4.22½	3.90	22.90	6.75	35.00
July 23	7.75	8.00	7.60	24.32½	24.60	4.40	4.22½	3.90	22.90	6.75	35.00
July 24	7.75	8.00	7.60	24.12½	24.37½	4.40	4.22½	3.87½	22.90	6.75	35.00
July 25	7.75	8.00	7.60	24.00	24.25	4.40	4.22½	3.87½	22.90	6.75	35.00
July 27	7.75	8.00	7.60	24.12½	24.37½	4.40	4.22½	3.87½	22.90	6.75	35.00
July 28	7.75	8.00	7.60	24.50	24.50	4.40	4.22½	3.87½	22.90	6.65	35.00

Machinery

VACATIONS of key executives in machine tool using industries now accentuate the difficulty experienced by salesmen in making contacts to justify their traveling expenses. Nevertheless, business is being placed here and there, including substantial government contracts, and unmistakable signs of activity in fields such as electric refrigeration, textiles and the shoe industry tend to support faith in mild recovery in the fall. Production is at a low ebb in spite of the fact that stocks of standard machines and parts in many cases practically are exhausted. Contract work and Russian business forestall many a complete shutdown.

New York—Chevrolet is reported to have placed with a Newark builder orders for 36 gear hobbers, the contract involving several hundred thousand dollars. This follows another large order for gear manufacturing machinery recently placed with Pratt & Whitney Co., Hartford, Conn., by Buick Motor Car Co. The new Chevrolet equipment is reported to be for production of a new silent transmission. The order not only is one of the largest placed by an automotive interest this year, but also is one of the heaviest placed by anyone with an eastern builder within recent months.

Some business has been placed by an elevator builder by a subsidiary of an upstate locomotive interest and also by a large equipment company which operates several plants. New York, New Haven & Hartford railroad is inquiring for a driving box borer, this being the first inquiry of its kind in a long time. Three firms are likely to divide 17 lathes for the Brooklyn navy yard on which bids were taken several weeks ago, as reported in this column.

Bids recently have been taken on equipment for Brooklyn totaling close to $75,000. Several machines, including a radial drill, several more lathes and a shaper, in addition to several tools for Philadelphia, have been bid since the opening on the 17 lathes just mentioned. Bids also are in on five tools for the American museum of natural history, including a lathe and shaper.

Worcester, Mass. — Domestically the grinder market continues dull, although there are prospects of improvement growing out of increased production of electric refrigerators under the advanced schedule adopted by Westinghouse Electric & Mfg. Co. at its Springfield, Mass., plant.

More activity is apparent in the woolen and textile industries, a hopeful sign for machine men even though the effects of this activity may fail to become apparent in the machinery market for many months.

Norton Co. has three machines ready for shipment to an automobile plant in Germany, but shipment is being delayed pending completition of arrangements between its resident manager abroad and German banks for payment. It is said that the effect of the moratorium may determine developments in this case.

Reed-Prentice Corp. has just closed an order with the government for two 16-inch lathes for Puget Sound navy yard, but action still is pending on lathes for Brooklyn and Mare Island yards. This company also has received another substantial order from Russia.

Pittsburgh—Machine tool sales are in small scattered lots, the aggregate of which is less than the unsatisfactory volume for the corresponding period in June. For most sellers it is the lowest level for the year.

Most tool users are determined to await improvement in business before replacing old equipment or adding to plant facilities. Inquiry consequently is limited to equipment which is urgently needed, the small lists being made up almost entirely of single items.

Cleveland—Extraordinarily dull conditions in the machinery market are accentuated just at this time by the fact that many key executives in the machinery using industries are away on vacations. Sales effort therefore is pecularily unproductive for the time being, which is correspondingly disheartening to individual salesmen.

While the domestic market is in this colorless condition, continued Russian business is decidedly welcome and is having no small amount of influence in keeping certain plants from closing down entirely. One leading company in this district is about to send an experienced service man to Russia to insure satisfaction with the large amount of equipment which it has exported to that country in recent months.

Chicago—School projects still are relatively important in the machine tool market. The Austin high school list, pending for more than a year, finally has been placed by the Chicago board of education.

Controversy had developed over the 24 lathes involved. Dealers had sought to establish with the board such a principle of broad specifications on these lathes that opportunity would be given for more general competition in the expected inquiry for about $500,000 worth of tools for the Lane technical high school which now is under construction. All except one of the Austin school's lathes were 13-inch, their specifications being such that the board was obligated to narrow its recommendations to one line. More leeway was provided in special specifications for the purchase of a 14-inch lathe.

Exports of Metalworking Machinery

	June		January through June	
	1931	1930	1931	1930
Engine lathes	96	103	330	721
Turret lathes	25	73	174	280
Other lathes	59	75	384	446
Vertical boring mills and chucking machines	37	19	176	141
Thread-cutting and automatic screw machines	31	55	122	423
Knee and column type milling machines	19	40	92	199
Other milling machines	110	74	254	450
Gear-cutting machines	70	69	247	262
Vertical drilling machines	49	38	185	333
Radial drilling machines	30	23	97	122
Other drilling machines	275	83	1118	1055
Planers and shapers	27	27	164	240
Surface grinding machines	42	13	102	143
External cylindrical grinding machines	81	49	199	350
Internal grinding machines	35	12	168	239
Tool grinding, cutter grinding, and universal grinding machines	79	182	475	966
Pneumatic portable tools	442	1563	5290	10539
Chucks for machine tools	727	1528	4919	15996

Construction and Enterprise

CONCISE, TIMELY BUSINESS BUILDING OPPORTUNITIES IN FIELD OF INDUSTRY

New England

SOUTHINGTON, CONN. — Tobrin Tool Co., Plantsville, Conn., has secured plant space for new quarters here for the manufacture of grinders, bench saws and other tools. William S. Thomson is president.

BRAINTREE, MASS.—City has plans for construction of a pumping station. F. A. Baker, Tremont building, Boston, engineer, is taking bids. Cost is estimated at $20,000.

WESTFIELD, MASS.—Central Specialty Corp. has been organized here for grinding and metal work. S. F. Cushman Jr. is president and general manager.

New York

BROOKLYN — Leverbias Machine Corp. has been incorporated with 1900 common shares by W. Jacobs, 51 Chambers street, New York.

BUFFALO—Bloedel Mfg. Co. has been organized here by Philip B. Bloedel. Company will operate a plant in East Ferry street for the manufacture of tools, dies and stampings.

JAMESTOWN—Maher Iron Works advises through Thomas F. Maher that the foundry unit recently noted as started will be 60 x 100 feet. Machine shop, 40 x 50 feet, also is being built. Construction will be completed about Sept. 15. New plant will be known as the Jamestown Iron Works. (Noted July 23.)

NEW YORK—Department of sanitation, city hall, has plans for the first unit of a municipal sewage disposal plant on Ward's island, to cost $30,000,000. Power house will be required.

New Jersey

BLOOMFIELD—General Electric Co., 1 River road, Schenectady, N. Y., is taking bids for the construction of a plant addition here, to cost $40,000. Plans are private.

BOGOTA—G. M. Brewster & Son, 253 West Ft. Lee road, will build a plant unit at an approximate cost of $40,000. F. L. Smith, 21 East Fortieth street, New York, architect and engineer, is receiving bids.

LAKEHURST — Bureau of supplies and accounts, navy department, Washington, will receive bids August 11 on schedule 6275 for one mobile gas compression unit and one compressor.

NEWARK—National Lock Washer Co., 40 Hermon street, is erecting a plant addition for blacksmithing.

NEWARK—Rebuilt Range Co. has been incorporated with $100,000 capital by Maurice Warner, 207 Market street, to rebuild gas and electric ranges.

Pennsylvania

ALLENTOWN — Strom-Port Mfg. Co. has been incorporated with $50,000 capital by Charles A. Porter, 22 South Eighteenth street, and John T. Lindstrom, 215 South Berks street, to manufacture and sell steam, water, gas and air machinery and other special machinery.

AMBRIDGE—Spang, Chalfant & Co. Inc., Clark building, Pittsburgh, will build an electric weld pipe mill at the local plant, construction to start in the near future.

HARRISBURG—Fuel Economizing Corp. has been incorporated with $5000 capital by D. E. Shenk, Palmyra, Pa., and Charles J. Dunkle, 1900 Derry street, Harrisburg, to manufacture blowers, heating and temperature control devices and other equipment.

PHILADELPHIA — Filler Machine Co., 1246 East Montgomery avenue, plans to construct a plant unit, 50 x 54 feet, at Thompson street and Montgomery avenue. Company manufactures filing devices.

PHILADELPHIA—Reading railroad, Reading Terminal building, has let contract to F. V. Warren Co., Lewis building, for a workshop to be built at Nineteenth and Wagner streets. Cost is estimated at $44,000.

PHILADELPHIA — Wilkening Mfg. Co., Fifteenth and Mt. Vernon avenues, has awarded contract to Golder Construction Co., Market Street National Bank building, for plant alterations at 2000 South Seventy-first street. Estimated cost, $8000.

PHILADELPHIA—Schuch Machinery Co. has been incorporated with $25,000 capital by George H. Neumann, 2928 Reed street, and Cornelius F. Schuch, 216 East Providence road, Aldan, Pa., to manufacture and assemble machinery, parts and equipment.

PHILADELPHIA — Elin Co. has been incorporated with $5000 capital by Frank X. Hughes, 330 Washington street, Newark, N. J., and Nathaniel Elin, 52 Hedden terrace, Newark, N. J., to manufacture, deal in and repair electrical and mechanical appliances.

PITTSBURGH—Pittsburgh Cut Stone Co., 5116 Cypress street, has closed bids for erection of a cutting plant, 175 x 200 feet, to be built on Preble avenue. Hunting, Davis & Dunnells, Century building, are architects.

Ohio

CARROLLTON—Carrollton Metal Products Co. has been incorporated by F. F. Pfefferkorn, C. A. Stevens and E. M. LaRue to manufacture metal products. Company is reported to have secured the local plant facilities of the Carrollton division of George H. Bowman Co., manufacturer of toys. Manufacture of aluminum toys and cooking utensils will be undertaken and operations later may include production of stainless steel articles. Full operations will require 100 employes. F. F. Pfefferkorn is president and C. A. Marshall secretary.

CINCINNATI—University of Cincinnati, Clifton avenue, has let contract for a 3-story machine shop, 56 x 112 feet, to cost $100,000. Hunt & Allan, Eagle Savings building, are architects.

CIRCLEVILLE — Mid-West Farm Equipment Co., Battle Creek, Mich., will remove operations to a local site by Sept. 1. Company manufactures tillage tools.

CLEVELAND—New York Central railroad, R. A. Rote chief engineer of western lines, West Third street, will build an engine house addition, 80 x 170 feet, at its Collinwood yards. G. Herr, care of owner, is architect. Cost is estimated at $60,000.

HAMILTON — Hamilton Automatic Stoker Corp., incorporated with $100,000 capital, will establish operations here for the manufacture of stokers for domestic and industrial use. John A. Weigel, president of the Hamilton Caster & Mfg. Co., is president of the new company. Manufacturing will be started in the plant of the Hamilton Caster company, machinery to be secured later for probable occupation of a separate plant.

TOLEDO — Davis Machinery Co. has been incorporated with 250 no par shares by Harry Levison, Spitzer building.

TORONTO — Pennsylvania & Ohio Power Co., Steubenville, O., has secured a 47-acre site adjoining its present holdings and will build two more power units, doubling its present capacity. Construction is to start late in the fall. Expenditures planned for one year total $3,000,000.

WARREN—Warren Steel Specialties Corp. has been incorporated with 250 no par shares by Howard Booher, Union Savings & Trust building.

Indiana

CROWN POINT—City plans to install a power plant with diesel engine. Burns & McDonnell Engineering Co., 400 Interstate building, Kansas City, Mo., is engineer.

FT. WAYNE—City, in connection with waterworks improvements, will

install pumping machinery and handling equipment. Hoad, Decker, Shoecraft & Drury, Engineering building, Detroit, are engineers.

HARTFORD CITY—Aircraft Corp. of America may locate a plant here for the manufacture of light planes, employing 50. Richard F. Harding is director of engineering and production. Company is to have offices in Indianapolis.

TERRE HAUTE—Vigo Automobile Co. has let contract for construction of a garage, with machine shop, to be built at Eighth and Mulberry streets. Structure will be 100 x 140 feet.

Michigan

DETROIT—Detroit Edison Co., 2000 Second street, plans construction of a substation on Madison avenue. Estimated cost, $60,000.

DETROIT—Non Ferrous Alloys Co., 6425 Charlevoix street, has been incorporated with $10,000 capital by Harold H. Harwood, 13425 Elmdale avenue, to operate a general machine shop.

DETROIT—Chrysler Corp., 341 Massachusetts avenue, will erect an addition to its Jefferson avenue plant. Plans are by Albert Kahn, 1004 Marquette building.

DETROIT — Mechanical Handling Systems Inc., 3454 Denton street, will build a plant unit at Nancy and Eureka streets, 90 x 160 feet. Cost is estimated at $100,000. Contract for design, construction and installation of equipment has been let to Austin Co., 16112 Euclid avenue, Cleveland.

ESCANABA—City plans to build a sewage disposal plant at a cost of about $200,000. Plans are being prepared by Suhr, Berryman, Peterson & Suhr Inc., 130 North Wells street, Chicago.

FLINT—Bids have been closed for the construction of a group of buildings here for the Institute for the Deaf, to include a 3-story shop building. Total cost of the project is estimated at $150,000. Mackenzie & Pratt are architects.

ONTONAGON—Harry A. Bond, 920 South Madison street, Green Bay, Wis., plans to organize the Bond Falls Hydro-Electric Co. to build and operate generating plants on the Ontonagon river near here. Cost of the plants is estimated at $400,000.

PORT HURON — Independent Gas Cock Co., Jonesville, Mich., will move operations to a location here in the plant formerly occupied by the Burwood Products Co. G. Nelson Smith, St. Louis, is president. P. E. Welton, Jonesville, is secretary and Frank Whitlark, Jonesville, is superintendent. Company manufactures forged brass gas cocks. Twenty-eight will be employed.

ST. JOSEPH — Company to be known as St. Joseph Steel Alloys Co. and to be capitalized at $125,000 is reported being formed here. Frank Hatfield, purchaser of property and equipment of the Langley avenue plant of the St. Joseph Electric Steel Castings Co., is interested. Proposed industry would produce stainless steel.

WYANDOTTE—Froehlick & Emery, Toledo, O., will receive bids until August 3 for coal and ash handling equipment to be installed in a power house here.

Illinois

BELLEVILLE—Supreme Engineering & Mfg. Co., 38 First National building, has been incorporated with $200,000 preferred and $50,000 common by E. E. Merrills, to manufacture oil burners.

CHICAGO—Eifel Inc., 4809 South Ashland avenue, has been incorporated with 500 no par shares by Frank H. T. Potter, 1 North LaSalle street, to manufacture machinery.

CHICAGO—Electric Time Neon Corp., 105 West Adams street, has been incorporated with 5000 no par shares by Netherton & Netherton, Bankers building, to deal in electrical devices.

CHICAGO—Franklin Mfg. & Sales Co. Inc., 4654 South Ashland avenue, has been incorporated with 120 no par shares by William Parr, 4055 West Sixteenth street, to deal in electrical household appliances.

CHICAGO—A. & J. Kitchen Tool Co. has been incorporated with 7000 no par shares by Mayer, Meyer, Austrian & Platt, Continental Illinois Bank building, to make household appliances.

CHICAGO—Runzel Cord & Wire Mfg. Co., recently organized for the manufacture of insulated cord and wire, has started work on a plant at 4727 Montrose avenue. Structure will be 75 x 125 feet. Cost is estimated at $50,000. W. L. Runzel is president of the company.

Southern States

BIRMINGHAM, ALA.—Alabama national guard, Thirty-first division, proposes establishment of a military airport adjoining the municipal airport here. Two hangars and other units will be constructed. Cost is estimated at $140,000.

WASHINGTON—Bureau of supplies and accounts, navy department, will receive bids August 11 on schedule 6244 for one oil-fired hardening furnace. Bids will be received on schedule 6245 for one electric steel annealing furnace, and on schedule 6274 for two corrugated suspension furnaces.

HODGE, LA.—Southern Advance Bag & Paper Co., moving its paper mill plant here from Howland, Me., will make additions to the local plant at a cost of approximately $1,500,000. A machine shop and boiler plant are included in the plans. S. E. Michaud is general manager in charge.

MONROE, LA.—Louisiana Power & Light Co., New Orleans, will build a substation here.

NEW ORLEANS—Orleans levee board, John Klorer chief engineer, has let contract to National Airport Engineering Co. Ltd., Schofield building, Cleveland, for initial construction program, to cost $1,500,000. Ultimate cost will be $10,000,000. Group for which plans are under way includes hangars and repair shops.

GOLDSBORO, N. C.—Foundry of Wayne Agricultural Works recently was damaged by fire. Loss is estimated at $100,000.

MEMPHIS, TENN.—District engineer, U. S. engineer office, 1006 McCall building, will receive bids until Aug. 18 for two heavy duty winding winches.

NORFOLK, VA.—Curtis Machine Co. Inc. has been incorporated with $25,000 capital by George H. Curtis Jr., 436 Mowbry arch.

NORFOLK, VA. — Old Dominion Foundry Works Inc. has been incorporated with $40,000 capital by J. H. Privott, 110 East Indian River road.

RICHMOND, VA.—F. H. Boatwright, 2536 Chamberlayne avenue, will build a hangar extension at Richard E. Byrd flying field.

Missouri

ST. LOUIS—Teuscher Pulley & Belting Co., 801 North Second street, is reported to be in the market for a heavy duty, 16 to 20-inch shaper, with parts.

ST. LOUIS—Tiffany Castings Co., Branch and Buchanan streets, recently organized by Zigman Chaplick of Chaplick Machine Works, 2016 W. Lake street, Chicago, will manufacture smoking stands and household equipment. Operations are being started in the former plant of the Tiffany Aluminum Products Co.

Arkansas

HOT SPRINGS—Arkansas Power & Light Co., C. J. Griffith vice president, Little Rock, Ark., has preliminary plans for construction of a hydroelectric plant on the Ouichita river near here. Maturity is indefinite. Cost will approximate $10,000,000.

PARAGOULD—City council proposes expansion of the municipal airport, including construction of hanggar units. Estimated cost, $70,000.

Oklahoma

BOISE CITY—Atchison, Topeka & Santa Fe railway, G. W. Harris chief engineer, 80 East Jackson boulevard, Chicago, has awarded contract for an engine house with boiler room annex to Sharp & Fellows Construction Co., 533 Central building, Los Angeles.

OKLAHOMA CITY — Langbein & Johnson, 915 North Hudson street, are in charge of equipment purchases for hangar unit recently noted as planned

for Oklahoma Aviation Service Inc. at municipal airport. (Noted June 11).

SULPHUR—State board of affairs, Oklahoma City, Okla., is receiving bids for building and equipping an industrial workshop addition, 54 x 128 feet, for the Oklahoma school for the deaf here.

Texas

DALLAS—Atlantic Pipe Line Co., R. W. Howe manager, Magnolia building, advises that two pumping stations will be built on a 10-inch line from East Texas to Port Arthur, Tex. Pumps will be centrifugal units, electrically driven. Contracts will be let from the Philadelphia office, 260 South Broad street.

SAN AUGUSTINE—Pumping station of the Texas Pipe Line Co. here recently was damaged by fire. Included were two steam units and a diesel unit. Plans have been made to rebuild. Oscar Wolk, Texas building, Houston, Tex., is engineer in charge.

TAYLOR—A. W. Gustafson, Hutto, Tex., plans to construct a hangar at the municipal airport here.

Minnesota

MINNEAPOLIS—City proposes to build a coal terminal and install handling equipment. Cost is estimated at $200,000.

ST. PAUL—Plant of the Capitol Iron & Metal Co., at 1428 Second street, recently was damaged by fire. Loss is estimated at $40,000.

Kansas

TOPEKA—International Harvester Co., 606 South Michigan avenue, Chicago, will build an addition to its branch plant here.

Colorado

DENVER—Bureau of reclamation, custom house, will receive bids Aug. 17 for two direct pumping units for the Yakima project.

GRAND JUNCTION—Public Service Co. of Colorado, C. N. Stannard president, Denver, proposes to build two hydroelectric plants near here, on the Gunnison and the Colorado rivers.

Montana

GREAT FALLS—Board of commissioners, Cascade county, is reported to be in the market for a valve grinding machine, emery wheel and connecting rod aligner. H. B. Lockhart is county surveyor.

Pacific Coast

MARE ISLAND, CALIF.—Bureau of supplies and accounts, navy department, Washington, will receive bids Aug. 11 on schedule 6223 for one 30-inch engine lathe. Bids will be received on schedule 6178 for five arc welding sets, with trucks.

SAN FRANCISCO—City and county of San Francisco is considering construction of a power plant at Red Mountain Bar in connection with the Hetch Hetchy project. Estimated cost, $1,000,000. Bond issue will be proposed in the fall.

BREMERTON, WASH.—Bureau of supplies and accounts, navy department, Washington, will receive bids Aug. 11 on schedule 6222 for one 48-inch vertical boring mill.

CHEHALIS, WASH.—State department of business control, Olympia, Wash., will award contract for construction of two shop buildings at the state training school here. Units will be 46 x 80 feet. Heath, Gore & Bell, Tacoma, Wash., are architects.

EVERETT, WASH. — City Steam Heating Co. has been incorporated with $55,000 capital by E. W. Murphy. Plants formerly occupied by Northwest Heating Co. and Coast Ice & Cold Storage Co. have been secured for operations.

SEATTLE—Machinery Mart Inc., recently incorporated with $50,000 capital by F. R. and E. R. Shoen, is erecting a warehouse.

SEATTLE—Duraloy Corp. has been incorporated with $5000 capital by O. W. Crockett and F. B. Hollenbeck to engage in alloying and processing of metals.

SEATTLE—State highway department, Olympia, Wash., has let contract for construction of a service building, to include machine shop department, at a local site. Approximate cost, $33,000.

Dominion of Canada

VANCOUVER, B. C.—Beach Foundry Ltd. is considering construction of a 4-story warehouse here, maturity later in the year.

New Trade Publications

ALLOY STEEL—Allegheny Steel Co., Brackenridge, Pa., has issued a booklet devoted to some of the recent uses developed for use of its alloy marketed under the name Allegheny metal.

WEIGHTS AND MEASURES—Mesta Machine Co., Pittsburgh, is distributing a pocket-size booklet of weights and measures tables. In compact form are presented various tables of data of everyday use for engineers and others.

SYNCHRONOUS MOTORS — Ideal Electric & Mfg. Co., Mansfield, O., in Bulletin No. 520 describes its synchronous motors, giving application data and dimension charts. Similar data for six other types of synchronous motors are shown. A new method of determining dimensions for any horsepower and speed rating is used.

AUTOMATIC MACHINES — Baird Machine Co., Bridgeport, Conn., has issued a bulletin on its automatic machines for production of various articles from wire and similar materials. These include clips, pins, chain springs. Other machines illustrated include foot and power presses, tumbling equipment, drying barrels and ball burnishing machines.

TIME CYCLE CONTACTORS—Automatic Temperature Control Co. Inc., 34 East Logan street, Philadelphia, in Bulletin 1212 describes and illustrates the application of its time cycle contactors to various processes. The devices include manually operated cycle stops, semi-automatic cycle stop, automatic cycle repeating type and cycle program types.

REINFORCED CONCRETE—A bulletin by the Concrete Reinforcing Steel institute, Tribune Tower, Chicago, has been prepared for circulation among architects, engineers and contractors, to carry the message of economy in reinforced concrete construction. It pictures a selection of tall buildings of reinforced concrete with a brief history of each and facts as to the economy of its construction.

ENGINEERING ACHIEVEMENTS—The first of a series of bulletins has been issued by the Wellman Engineering Co., Cleveland, to tell of the engineering achievements attained through its long experience in building special machinery of massive sort. The initial issue paves the way for more specific description in later numbers. The doors of the Goodyear Zeppelin hangar at Akron, O., are illustrated in this number. These weigh more than a million pounds each and construction to carry this great weight in opening and closing presented new engineering problems solved by this company.

CASTINGS—Gray Iron Institute Inc., Terminal Tower building, Cleveland, recently has developed a set of sales helps for use by its members. The first part is devoted to reprints of several articles dealing with selling castings, from *The Foundry*. Following this is a list of articles made wholly or in part of gray iron castings. Chapters entitled, "Progress in Gray Iron Castings," "Pointing the Way to Better Castings," "Standard Sales Agreement and Trade Customs in the Gray Iron Industry," and a number of consumer or merchandising bulletins are included. Samples of the standard sales contract, developed from the standard sales agreement and trade customs also are shown.